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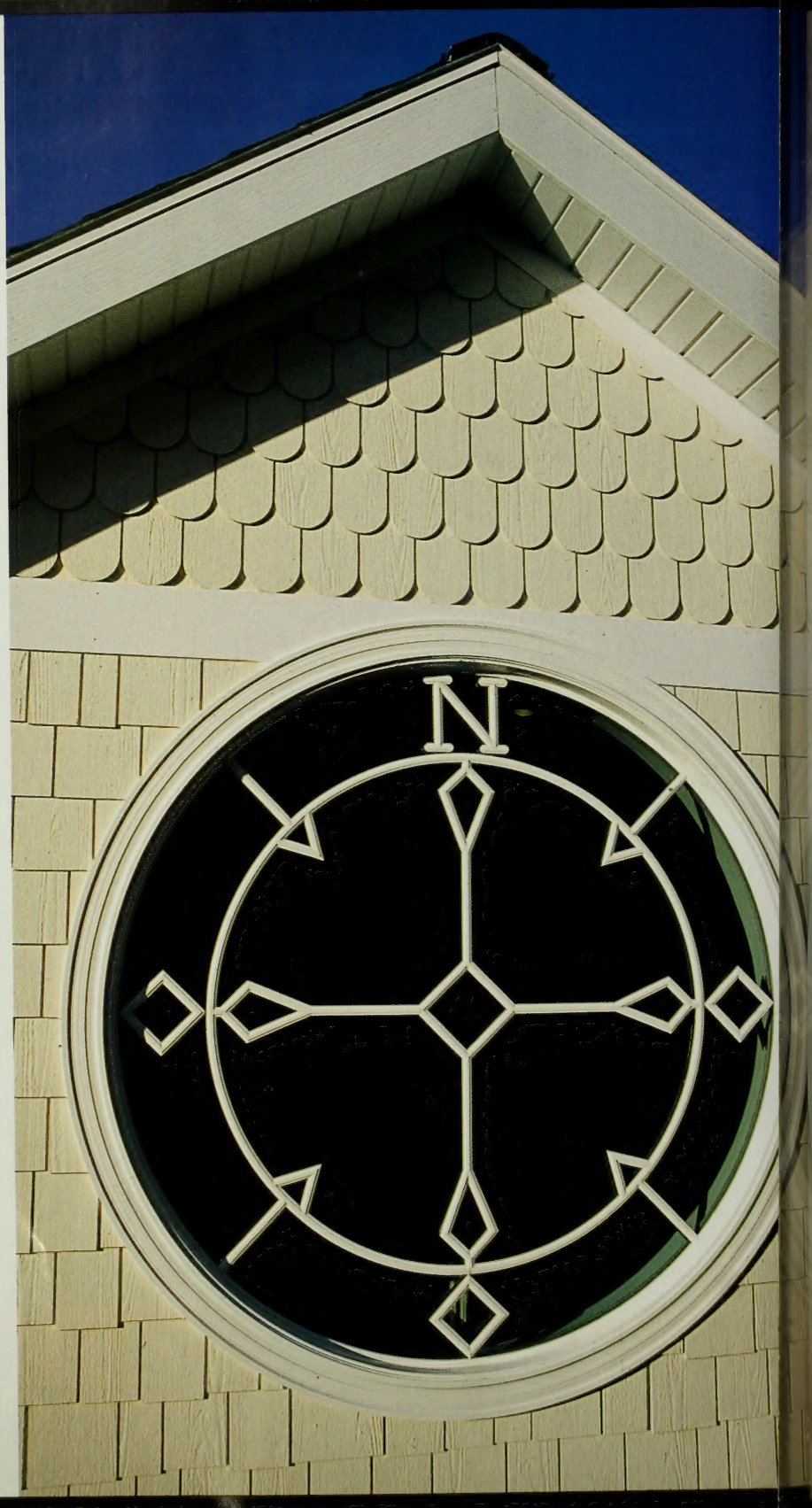
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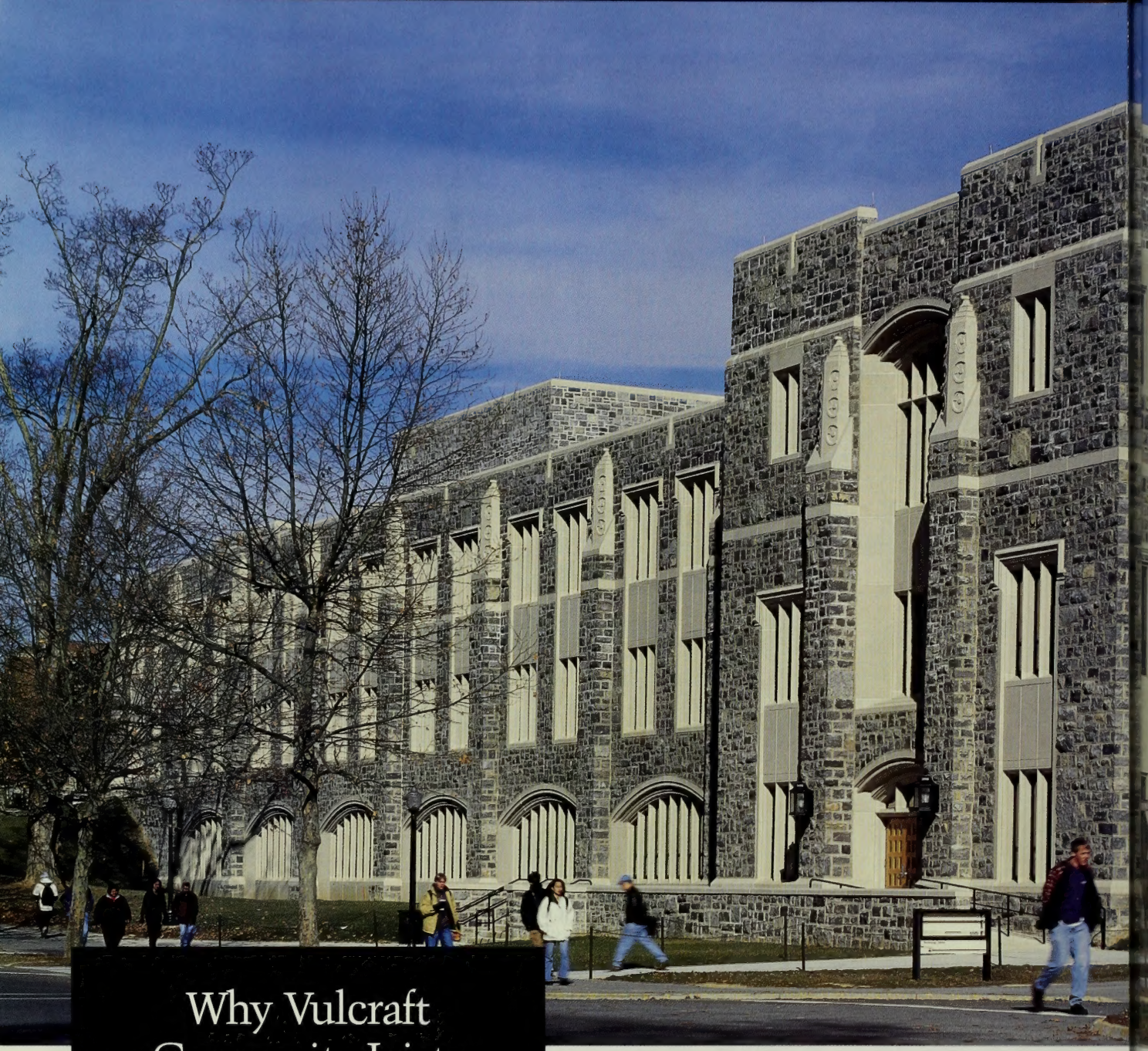
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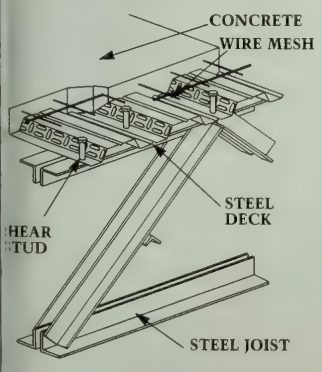
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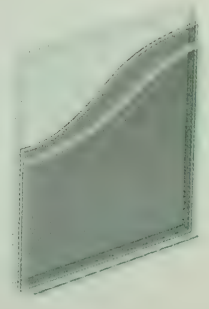


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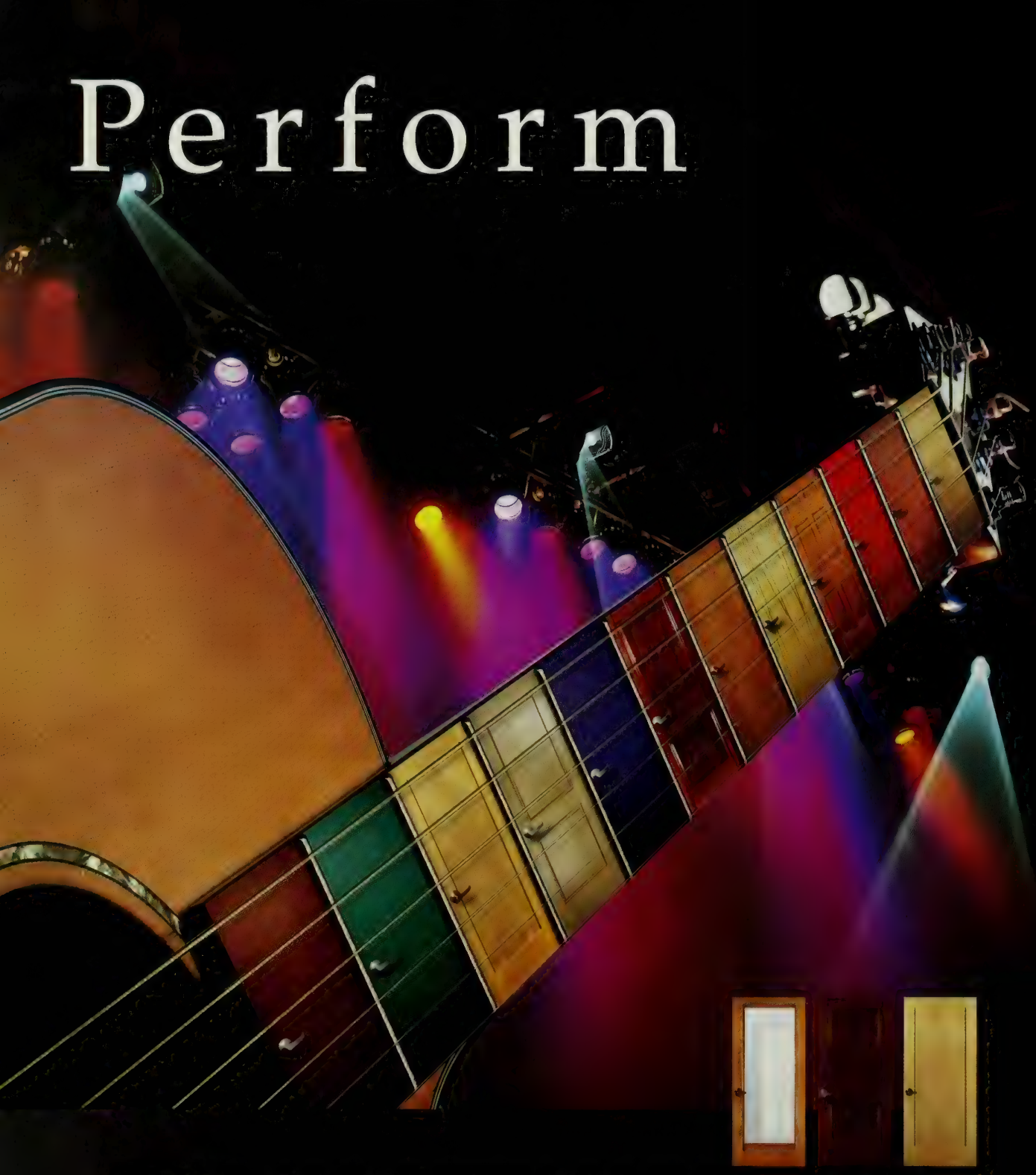


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On the Cover: *Soldier Field, by Wood + Zapata. Photograph by David Seide/Defined Space*
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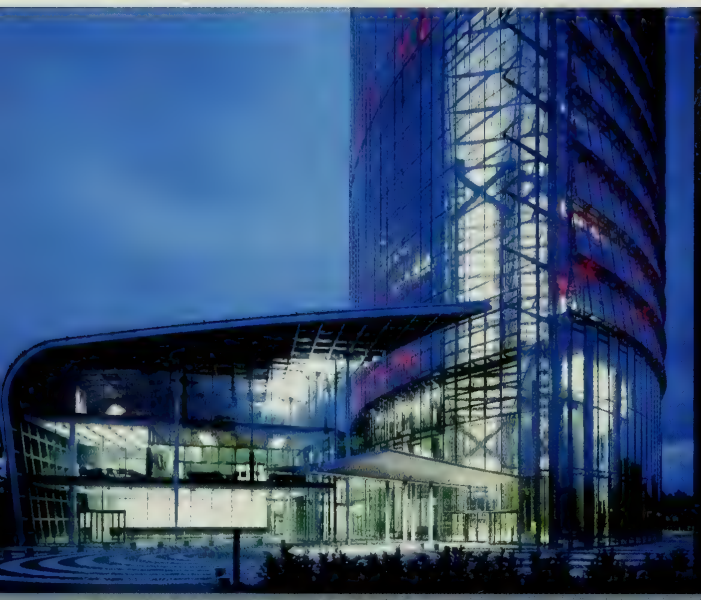
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Chicago Feature

Take another look at the Windy City – a place with a rich architectural past and a design-savvy future – and examine projects like Skybridge Housing, Soldier Field, and the IIT campus. Read more about Helmut Jahn, whose Chicago-based firm adds European styling to new buildings worldwide.

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Learn more about several young architects changing the face and the future of Chicago including Ammar Eloueini, an architect who divides his time between Paris and Chicago. Also, meet Mohammed Lawal who runs an architectural youth program in Minneapolis.

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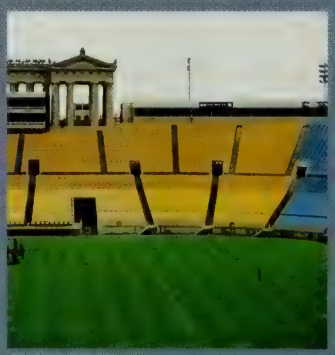
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Multimedia Annex

In this new Web site section, you will have easy access to all past Web-based features. Virtual tours of museums, restaurants, retail interiors, and archives of interviews all in one place. Come see what you may have missed.

This month we feature the award-winning photo essay by Joshua Lutz.



Lighting

Our lighting section will dazzle you. Revisit the Snow Show and see the integral part that lighting played. We also visit two artists who merge light and space for arresting visual results.

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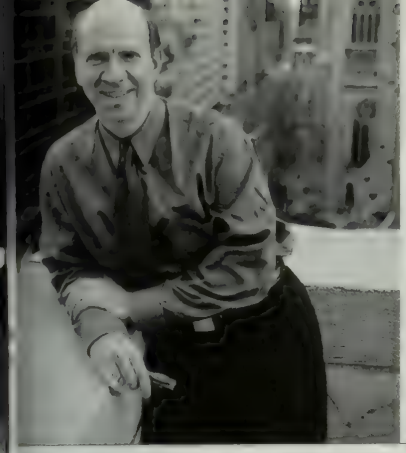
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Editorial

By Robert Ivy, FAIA

This month, the Pritzker Prize will be given to architect Zaha Hadid in a ceremony at the Hermitage Museum in St. Petersburg. When she mounts the stage to claim her prize, she joins a worldwide panoply of creative giants. And, by the way, Zaha Hadid happens to be a British citizen born in Iraq, and a woman—the first to receive the accolade in the organization's 26-year history. The 21st century has arrived.

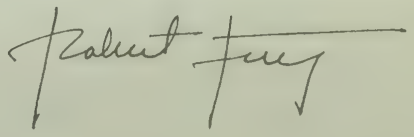
While it may be gratifying to see a leading architect so lionized, and time for a woman to win, this particular adulation came with a headache: When the media's first wave of stories hit the stands, Hadid's gender dominated the coverage. Writers insisted on treating the architect differently from her male predecessors. One article, particularly, stands out. It was striking that it occupied the Style *section of* The New York Times Magazine *on March 28. Immediately stigmatized, Hadid (and by association her architecture) had thus been relegated to the second-tier, and her achievement regarded as superficial. The author, instead, reminded us of the quirks of her personality. She has been, he claimed with a kind of justifying pride, a "diva," as if that designation, so freighted with the unstable artistic emotion (read female), accorded her star status. The story then went on to discuss the changes in personality that have accompanied her increasing maturity. Would male architects be subject to such amateur psychoanalysis? The author then treats us to a description of the architect relaxing, well-oiled, by a swimming pool in Miami Beach. Save us!*

When did the term "architect" include gender? Rather than tabloid-talk, Hadid's elevation should be an opportunity for the critical community to exult in a meaningful way. This architect communicates ideas visually, offering an opportunity for discussion and debate within the profession and with correlative intellectual communities. The informed public, hungry for architectural insight, craves solid food. Instead, we have all been treated to condescension and ghettoizing of a prodigious talent, armed with tidbits about her favorite designer (Miyake).

While any public figure is fair game for the journalist's pen (and Hadid has the magnetic persona to attract media attention), the timing is all. Can you imagine the leading practitioners in other professions treated to such personal scrutiny on receiving a major award? Marie Curie, for instance, subjected to fashion commentary. Or Nobel Laureate Toni Morrison appraised for her hairstyle. In receiving the Pritzker, Hadid joins those noble ranks and deserves better. Architecture deserves better.

Having learned what we did not care to know, regretfully we did not adequately learn why Hadid deserved the prize. (Although a report on the architect winning the award had appeared in the Times *on March 22.) While readers of the* Times *are acquainted with her first project in the United States, the Museum of Contemporary Art in Cincinnati, she has a growing roster of work in progress around the world. Passing mention was made of her vision, a fluid ability to reduce the post-Einsteinian precepts of space and time to images, blurring the boundary between here and there. In Hadid's graphic precociousness, she has taken place and turned it in on itself, creating compositions in which time and matter continually elide. Her perceptions come as close as feasible to a new way of seeing the built world, at a moment that this gifted architect has just begun to build. We all want to know more about Hadid.*

For most, Zaha Hadid has only been an alliterative name up to now. Sadly, the Hadid case underscores that we continue to treat women architects differently, in an age when such discrimination should be universally decried. The cult of personality she has been subjected to at a moment of major recognition diminishes her achievements and clouds our perception and understanding. Zaha Hadid, congratulations on winning the Pritzker. But you, and we, deserve better treatment at the hands of self-styled admirers.



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Letters

Design again, with feeling

Empathy is one of the unheralded qualities of those people I consider competent and gracious designers, and it seems unfortunate to me that Mr. Sorkin had to have a cast on his own foot to finally "get it" [Critique, April 2004, page 85]. The design issues that he raises in his column are common problems for anyone pushing someone in a wheelchair; anyone with a baby stroller; anyone with luggage; and frankly, anyone who has been seriously ill and slowly recovers and tries to get back to their own life. One of the essential qualities of an empathetic designer is that they don't have to actually experience something to understand the impact that it has on someone's life.

I'm a tall, fairly strong woman, and even I have been buffaloed by door closers that are set with too much resistance; oddly calculated stairs; or paper-towel dispensers that are placed at precisely the height that will guarantee that any water on my hands will run down my elbow and stain the cuff of my blouse. I can't imagine how my smaller, less hardy colleagues function successfully in the same environment. Perhaps as we all age, we will find a way to design an environment that makes expansive gestures rather than meager accommodation.

—Anne Whitacre, Assoc. AIA Associate, Zimmer Gunsul Frasca, Seattle

Now is not the time

I agree with your arguments in the January editorial ["Hurry Up and Wait," page 15]. We must slow down and allow peoples' perspectives on the events of September 11 to clear. It is understandable why everyone wants something built immediately, but now is not the right time to act.

Throughout history, the role of monuments and memorials has been to revisit the emotions and feelings of the specified event and to honor and mourn those who gave their lives. Through abstract and artistic ways—through use of light or water—each of the eight finalists honored the men and women who gave their lives, but they seem to fall short in exposing our memories and emotions.

Secondly, after viewing the eight finalists' designs, I felt that none of them was very inviting, but instead they left a large unresolved space in the fabric of downtown Manhattan. Your editorial was well planned, and I believe that we need more time until the right solution presents itself.

—Mark Trimbath
State College, Pa.

What of human rights?

While there's little doubt China will be an increasingly important venue for the profession in the 21st century, the March issue's editors seemed to have slept through their own "Wake Up!" call [Editorial, page 17] and missed some rather important facts. The issue was all but silent with respect to China's authoritarian regime and its record of human rights violations, including limits on freedom of expression, assembly, and religion outlined by organizations such as Amnesty International, Human Rights Watch, and even The Heritage Foundation. As for China's oft-mentioned savvy business advances, the editors neglected to list cost savings made possible by near slave labor, deathtrap factories, and a general disregard for natural resources and the environment. When the negative environmental effects were mentioned, they were mentioned in passing and promptly forgiven in subsequent passages. If indeed, as the editor writes, real radical change is supported with facts,

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Letters

then the issue and its editors fell short in this apparently objective intention.

—Eric J. Jenkins, AIA
Washington, D.C.

Gorgeous Gorges

Concerns about the lake behind the Three Gorges Dam being "stinky and stagnant" [Correspondent's File, March 2004, page 57] are largely imaginary. The slope of the riverbed determines a river's maximum carrying capacity. As the water level rises, the colder water will continue to flow along the bottom of the lake until the water reaches its maximum density at about 40 degrees F. As the current slows, the heaviest items will be deposited first, with the lightest settling last. Sedimentation is part of the natural purification process. A total of 450 or more feet is a large gradient for cleaning the water. The resulting lake will be among the cleanest in the world.

The best of the new housing will be along the south-facing stretches of the lake. The worst will be along any north-facing slopes and at the highest elevations, offering the least protection from the cold. The wintertime death rates will see spikes for a few years, until residents learn to bundle up appropriately to the higher elevations.

"Great cities" is an oxymoron. Modern plumbing has largely eliminated, or at least masked, most of the detrimental effects of citification of smaller towns. Still, one of man's better instincts is to spread out. Communism, even as modified by China's family-oriented society, still committed the grossest of crimes in moving people off the land.

—John Edward Mahalo
Via e-mail

Landscaping escaping

Regarding current architectural development in China: Wow! Do the words "public realm" translate into Chinese? Clearly, 1960s planning principles and an incredible variety of big boxes do (every shape and form: perforated, undulated, repeatedly replicated, exfoliated). Compare the photos on pages 91 and 98 and tell me where you'd rather be. Given the speed with which change is occurring, as least the pain will be over quickly.

—Bob Close, ASLA
Close Landscape Architecture
Saint Paul, Minn.

Corrections

In the March article on the 2008 Beijing Olympics [pages 102 and 104], CSCEC+Design should have been credited as part of the design team for the National Swimming Center, with PTW and Arup. Also in March [page 115], Mr. Huang Zhi Jian's correct title is vice chairman of the Shanghai Construction and Management Commission. In the April story on Team Twin Towers [News, page 36], Randi Warner's name is misspelled, and he is a TV/Film producer, not a journalist. The towers' memorials will be five, not 12, stories high. In the April Product Briefs [pages 214 and 216], M2L's Web site should have been www.m2lcollection.com. In the April Correspondent's File [page 79], the Pharmacy Building is named for donor Leslie L. Dan, and its design is by Foster and Partners with Moffat Kinoshita Architects of Toronto. In April, photos of Marcio Kogan's Du Plessis House by Arnaldo Pappalardo [page 140] were reversed. The correct orientation is shown below.

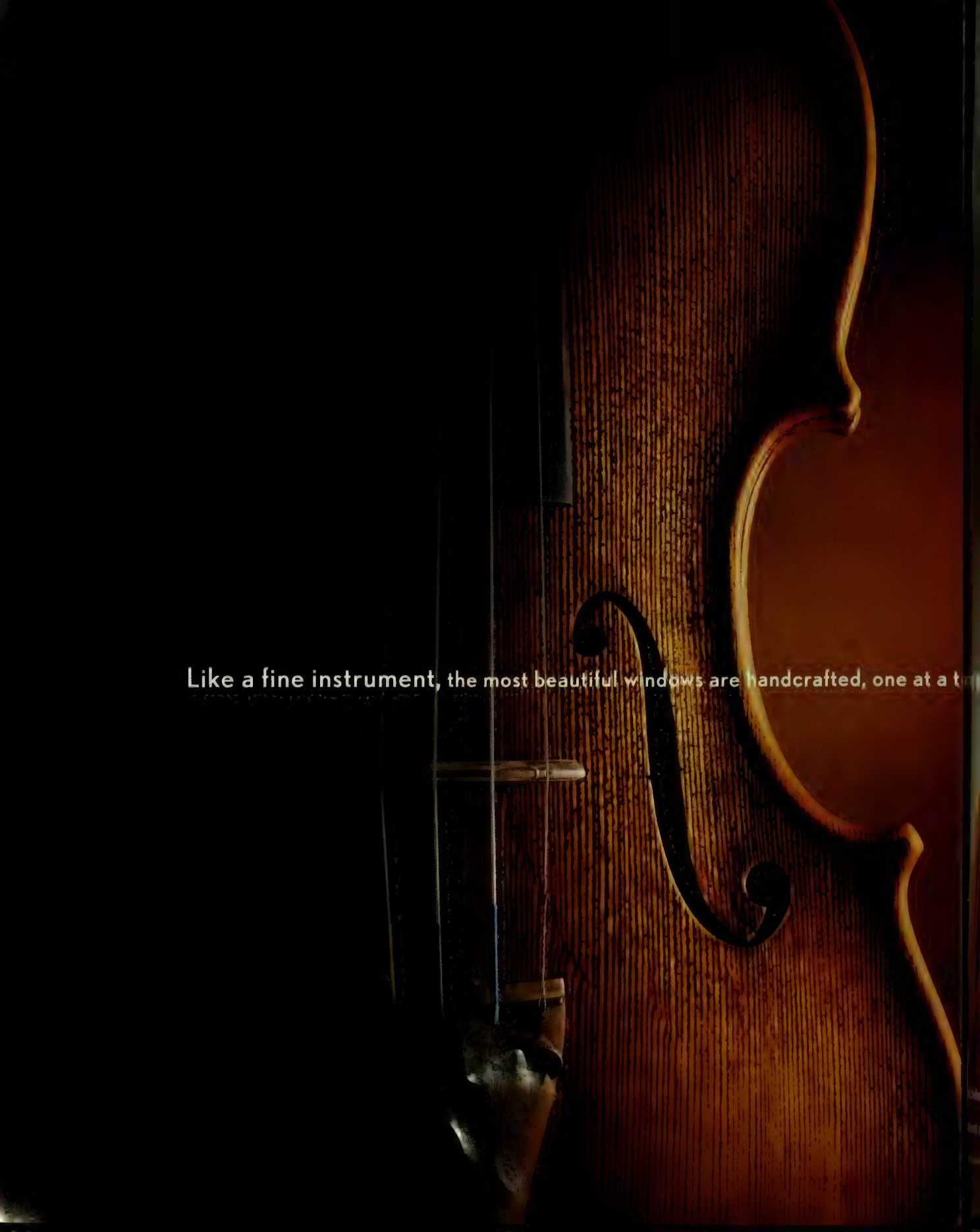
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Architect Pierre Koenig dies p. 40

Zaha Hadid: Barrier breaker, conversation starter

The most recent figures on women in architecture in the U.S. reveal a rapidly cracking glass ceiling. In 2002, women made up nearly 21 percent of firm principles, nearly double the number in 1999. The percentage of licensed female architects rose from around 14 to almost 20 in the same period. Women make up nearly 30 percent of all architectural staff, reflecting the growing ranks of female graduates for architecture schools (most schools are nearing or exceeding equal male/female enrollment).

As reported in last month's issue, architecture's highest honor, the Pritzker Prize, has finally caught up with reality, with Zaha Hadid becoming the first woman to win the award in its 26-year history. Most hailed the decision, but some critics, pointing to Hadid's small body of built work, decried the choice as influenced by political correctness. Regardless, Hadid's influence on the field extends well beyond her dynamic works, as leading architects told RECORD. Meanwhile, Hadid insists, "There still seems to be prejudice in the world of construction. We all should be considered architects, no gender distinction should be made!"



"I say hurrah. Her incredible drawings have changed the way people think about drawing and the way they think about building. She's an original. It can't help but be positive. One doesn't think about gender differences in schools. One still does in practice, but that's changing, too."
—Billie Tsien, Tod Williams Billie Tsien & Associates, New York



"I see Zaha Hadid's recognition by the Pritzker Prize less as an achievement for gender politics than one for independent architectural research and vision."
—Elizabeth Diller, Diller Scofidio + Renfro, New York



"She's the first woman to have won the Pritzker, and I think that's important. What it means to other women in architecture, I couldn't comment. I don't particularly think [the prize] was anti-woman. I'm sure if there were a woman that they felt was worthy, they would have given it to her. Women have stepped up, but not as a principal in a firm as Zaha has."
—Richard Meier, FAIA, Richard Meier & Partners Architects, New York



"It's intriguing because it suggests a change in criteria. It's a recognition of her Lou Kahn-like tenacity and vision. There have been enormous changes in the 30 years I've been working as an architect and urban designer, and I'm an optimist, but not a pollyanna. It's still tremendously challenging for women in this field."
—Marilyn Jordon Taylor, FAIA, Skidmore, Owings & Merrill, New York



"The Pritzker jury has a certain definition of architecture, an almost 19th-century notion of great men and of design that is generated through the genius of one mind. It's taken a long time to find a woman who appears to fit those notions. The real prize is having clients who trust you and seeing your buildings used as planned. That's success."
—Denise Scott Brown, Venturi, Scott Brown & Associates, Philadelphia



"To suggest that she is anything other than an exceptional designer only diminishes the prize. But the symbolism is there to be discussed. If it serves as an impetus for other women in the field, then that's wonderful."
—Eric Owen Moss, FAIA, Director SCI-Arc, Los Angeles



"I think that in my generation there were tremendous advantages because there were so few women in the field. I don't think things have changed all that radically. It takes a lot of perseverance to succeed as an architect.

I appreciate anyone who sticks to their aspirations."
—Patricia Patkau, Patkau Architects, Vancouver, British Columbia



"It's completely empowering. More than half of all our students are women. We are at a pivotal moment. We will achieve parity in the profession in this generation. Young ambitious women will face fewer barriers because of people like Zaha Hadid."
—Toshiko Mori, AIA, Toshiko Mori Architect, New York; Chair of Architecture, Harvard Design School, Cambridge, Mass.



"It's great, especially because people haven't spent a lot of time on the fact that she's a woman. It's expected at this point."
—Carol Ross Barney, FAIA, Ross Barney + Jankowski Architects, Chicago



"Her drawings extend and express the desire of architecture, a future of architecture. It's an encouraging sign for the prize and for architecture.

We should celebrate. Other things are more significant than the fact that she's a woman. I think we're over that. In that sense, it's long overdue."
—Steven Holl, AIA, Steven Holl Architects, New York

Interviews and text by Alan G. Brake

REBUILDING LOWER MANHATTAN

OFF THE RECORD

Mies van der Rohe's Farnsworth House is slated to open to the public as a museum on Saturday, May 1. The house was purchased at a Sotheby's auction by preservation groups last December.

The third and final building for Cesar Pelli's Pacific Design Center in West Hollywood received development plan approval. The new "Red Building," as it's being called, will join blue- and green-sheathed structures on the center's 14-acre site at Melrose Avenue and San Vicente Boulevard.

Daniel Libeskind has been selected to design a Salvador Dali Museum in Prague, Czech Republic. The 15.7 million museum will be in the center of Prague and will display 1,000 to 1,500 Dali works. It could be completed as soon as 2007.

Peter Walker and Mel Chin have been selected to design a public plaza for the Jack S. Blanton Museum of Art at the University of Texas.

Architecture critic Paul Goldberger has announced that on July 1 he will become dean of Parson's School of Design at New School University in New York.

Art Center College of Design in Pasadena, California, has canceled a collaboration with Portuguese architect Alvaro Siza for a major expansion of the campus.

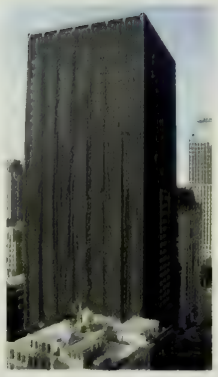
The Kennedy Center Plaza project, which will add significant public space to the Washington, D.C., performing arts complex, cleared its first obstacle in March. The Federal Commission of Fine Arts voted 6 to 0 to proceed with the current design after a presentation by architect Rafael Viñoly.

Bates Lowry, founding director of the National Building Museum, passed away this March. He was 80.

Deutsche Bank Building coming down

The Lower Manhattan Development Corporation (LMDC) has announced that the Deutsche Bank Building on 130 Liberty Street, just south of Ground Zero, will be razed, after a settlement was reached between the company and its insurers.

The building suffered a 15-story gash after the collapse of the Twin Towers, and Deutsche Bank deemed its building lost. Several insurers, including AXA Insurance and Allianz Insurance, disagreed, fighting to salvage the building.



Deutsche Bank Building.

Under the settlement, brokered by former senator George Mitchell, the LMDC will purchase the land for $90 million and pay for building demolition. The plan caps demolition and cleaning costs at $45 million and projects five to seven months for this to take place.

The resolution to bring the building down will increase open space in the area, opening up 30,000 square feet of land, and it will bring more room for the World Trade Center Memorial.

"The resolution of the Deutsche Bank Insurance Dispute puts the last piece in place for rebuilding the World Trade Center site," commented LMDC president Kevin Rampe. *Sam Lubell*



The Valeo Technical Center.

Davis Brody Bond to join WTC Memorial team

Michael Arad and Peter Walker have company at Ground Zero. New York–based firm Davis Brody Bond (DBB) has been chosen by the LMDC to work with the team on the design of the World Trade Center Memorial.

The firm, which has practiced for more than 40 years and has won the AIA firm award, brings a significant level of experience to the Memorial team. Projects include the renovation of the New York Public Library's Rose Reading Room, an addition to the Harvard Club of New York, the U.S. Census Administration headquarters in Maryland, the Valeo Technical Center in Michigan, and, significantly, a master plan for the World Trade Center's public spaces that was stalled in the wake of the 1993 terrorist attacks.

The LMDC could not be reached for comment, but some critics thought that it had appointed the firm to make up for Arad's relative inexperience as an architect.

"I don't agree with that," rebutted Arad. "I think that there's going to be a great team here." DBB principal Steven Davis added, "Michael Arad is a very capable man," and pledged that his firm has no intention of taking charge of the project. "This isn't about our vision, it's about their vision," said Davis. "We're very much respectful of their role. They are the lead architects." *S.L.*

WTC Briefs

Memorial Committee named

The LMDC announced the formation of a Memorial Center Advisory Committee, which will play a major role in guiding development of the Memorial Center at Ground Zero. The 24 members of the committee will include police and fire personnel, architects, curators, museum administrators, 9/11 victims' family members, and members of the preservation, academic, government, and business communities. *S.L.*

Carpenter to work on Fulton hub

New York designer James Carpenter has been selected by the New York Metropolitan Transportation Authority (MTA) to contribute to the new Fulton Street Transit Center in Lower Manhattan.



Carpenter's Moiré Stair.

The selection of Carpenter, finalized on March 31, was made from a field of 215 artist proposals submitted last December. The designer said his contribution to the station, located on Fulton Street and Broadway, would be a roughly five story, "very delicate tensile structure," which will include a translucent glass exterior and an inner form of finely perforated metal.

Carpenter's work explores interactions of glass and light. Past projects include a large cable-glass wall at the Time Warner Center in New York and the Moiré Stair Tower for Helmut Jahn's Deutsche Post in Bonn, Germany. The designer is also creating a cable-net wall for the nearby 7 World Trade Center in New York. The MTA has approved $340,000 for Carpenter's contribution, and $750 million for the entire complex, which is being designed by Nicholas Grimshaw & Partners of London. Completion is expected in 2007. *S.L.*

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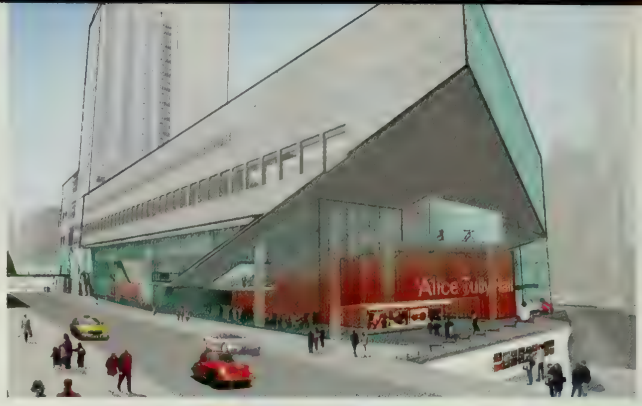
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A new, but still recognizable, face unveiled for New York's Lincoln Center





Transparent facades and radical shapes along 65th Street (above), and at the North Plaza (right).

On April 13, Lincoln Center unveiled designs for the first phase of redevelopment of the area around West 65th Street in Manhattan, a futuristic image infused with midcentury Modern.

Plans conceived over the past several months by New York firm Diller Scofidio + Renfro (formerly Diller + Scofidio) include major renovation and expansion of the area's streetscape, public spaces, and virtually all of its cultural facilities. Total cost is projected at $325 million.

The spaces now being redeveloped make up one half of Lincoln Center's total area. Designs for the second phase of redevelopment, on Lincoln Center's south side (including the Metropolitan Opera and the complex's plaza) will likely be unveiled in about a year, said Diller Scofidio + Renfro principal Ricardo Scofidio.

The overall design concept, conceived in collaboration with Fox & Fowle Architects, displays Diller Scofidio + Renfro's gift for maximizing transparency, with copious amounts of glass, and for gaining the perception of fluidity, with the implementation of flowing contours. All the while, the scheme maintains the essence of Lincoln Center's Modernist aesthetic.

"There's something really interesting, even magical, about the space's '60s architecture. We wanted to amplify its most successful features and fulfill its unrealized potential," said firm principal Elizabeth Diller.

The redesign of 65th Street will include transparent building facades; dramatic lighting, such as LED light "mats" set in sidewalks; narrowing of the street; replacement of a bulky concrete bridge over 65th Street with a glass one; and the removal of underground parking entrances on the street.

Enhancements to the North Plaza will include a new sloping "campus green" built on the roof of a restaurant, the enlargement and resurfacing of the space's reflecting pool, and the addition of a closely clipped bosk of trees, reminiscent of a French garden, next to the pool.

Facilities changes include an expansion of The Julliard School and the Lincoln Center Theater, a new facility for the Film Society of Lincoln Center, and a redesign of the Samuel B. and David Rose Building, which includes a new glass entry and lobby. Alice Tully Hall will get a complete overhaul, including a new glass entrance, whose roof shoots skyward at an abrupt angle and includes a donor facility suspended in glass above the hall's inner lobby.

While Lincoln Center is now embarking on a $325 million capital campaign to help finance the project, much funding will come from the city. "There will always be a reason why not [to proceed], but if you study forever, you do nothing," commented Mayor Bloomberg. Construction is expected to begin in 2006. *S.L.*

New York's Jets Stadium and Javits Center expansion finally moving forward



Last month, at a long-anticipated ceremony at the Jacob K. Javits Convention Center in New York, Mayor Michael Bloomberg and Governor George Pataki announced plans for a new "Convention Corridor" in the city. The plan includes a greatly expanded Javits Center and a new sports and convention complex that will include a 75,000-seat arena for the New York Jets. According to Mayor Bloomberg, the project, located between the western edges of 30th and 42nd streets, will "catapult New York City into the 21st century," and provide abundant jobs as well as millions of dollars in tax revenue.

The existing Javits Center, designed by I.M. Pei and Associates, opened in 1986 and has long been criticized for its limited capacity. In 2002 alone, 63 shows were turned away due to the Javits's dearth of space, says Charles Gargano, chairman of the Convention Center Development Corporation. Hellmuth, Obata + Kassabaum (HOK) has been designing the Javits expansion, and if the project, which also includes a 50-story hotel, moves forward, the center will essentially double in size, from 760,000 square feet to 1,705,000.

Connected below grade to the Javits will be the New York Sports and Convention Center (NYSCC), designed by Kohn Pedersen Fox Associates (KPF). The NYSCC, in addition to hosting the Jets and holding new convention space, will also contain a public plaza, restaurants, a community theater, and a museum. The stadium itself, explains KPF senior associate principal Trent Tesch, will be constructed on a massive deck to be built above the west side rail yards. The designs feature solar panels, wind turbines, and hydroelectric technology capable of generating a major portion of the complex's power. Developers are also offering up the space as evidence that New York City is capable and worthy of hosting the 2012 Olympics.

Community groups concerned about changes to their neighborhood complain that the projects will lead to demolition of much of the area and displacement of locals, as well as diverting tax revenue from issues of pressing concern. John Fisher, spokesman for the West Side Coalition, an organization of local groups, likens the proposals to "putting a 1,600 pound gorilla right in the middle of the neighborhood." Additionally, warns Fisher, the project would inevitably create "more gridlock than the city could absorb." City spokesperson Jennifer Falk notes that the Convention Corridor plan includes no provisions for condemnation, although the neighborhoodwide Hudson Yards redevelopment plan may raze some 140 buildings. Pending zoning and environmental approvals, both projects are slated to begin construction by 2005. Both have received financing commitments from city, state, and private sources. The NYSCC is estimated to cost at least $1.4 billion, and the Javits expansion's first phase $1.4 billion. ***Ilan Kayatsky and Randi Greenberg***

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Record News



Landfill could replace much of Victoria Harbour.

Hong Kong's Victoria Harbour faces serious landfill threat

A setback for advocates of Hong Kong's Victoria Harbour occurred on March 9 when a Hong Kong court ruled that the region's government can proceed on a landfill project that will reduce the size of the harbor to ease traffic congestion.

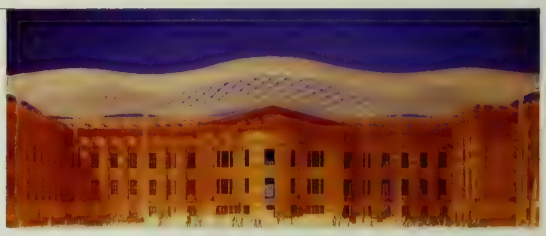
The Hong Kong skyline is known for its picturesque harbor, a natural symbol of the city's beauty, and in stark contrast to its crowded urban grid of skyscrapers and elevated roadways. In recent years, harbor protectionists and city planners have had an acrimonious relationship: The harbor has slowly been reduced to about half of its original size as the government continues to fill in the waterway for public works and lucrative developments, claims the Society for the Protection of the Harbour, a nonprofit organization, which was the plaintiff in the lawsuit.

The decision will allow city planners to continue a project in Central, which is a busy section of the island's central business district, which involves filling in an 45-acre area with a 2.5-mile underground highway and an extension of a subway line. The government estimates that the highway will reduce the journey time through Hong Kong's most congested area by 20 minutes.

The Housing, Planning and Lands Bureau of Hong Kong says that it has been sensitive to demands made by harbor advocates. Other than several projects that are currently in the works, "there will be no more reclamation within the harbor," says Carrie Lam, the bureau's Permanent Secretary. "We also see a lot of consensus on working together to create a vibrant harbor."

The March 9 ruling comes a little more than a month after the Society for the Protection of the Harbour was handed a victory in a final appeals court in a separate lawsuit. The court ruled that a government landfill project located in the Wanchai district, near Central, was unlawful because the waterway was a natural heritage site that should be preserved, according to local news reports. Work has stopped on the Wanchai section. Winston Chu, the lawyer for the Society for the Protection of Harbour, says he is "frustrated" by the most recent verdict and notes that the planned highway was supposed to pass through a section of the project that has been halted. "The government is now allowed to build half of the roadway. It is strange that this should happen," says Chu, who is planning to appeal the March 9 decision. *Jen Lin-Liu*

Foster designing atrium for two Smithsonian museums



The glass enclosure will cover a 28,000-square-foot courtyard.

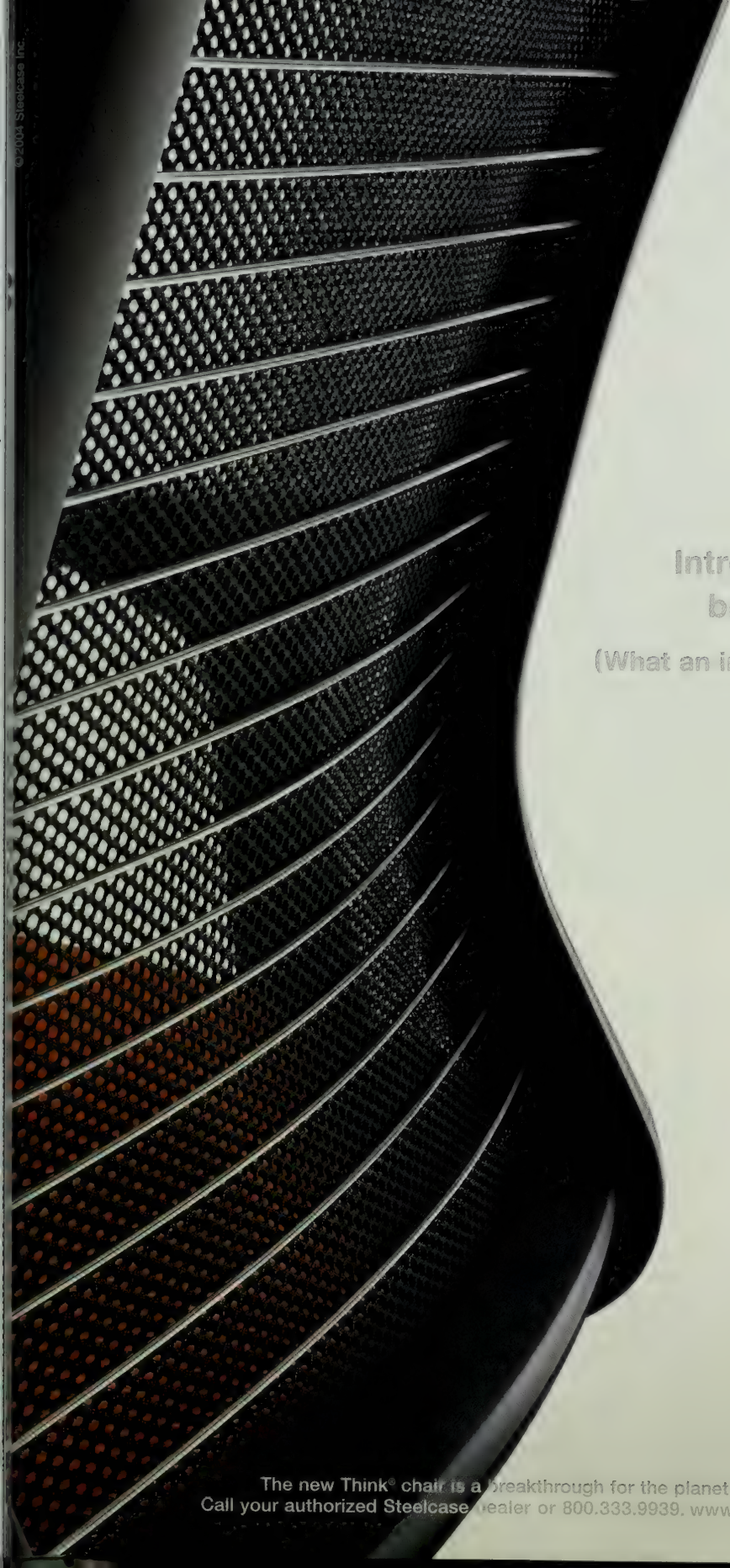
Norman Foster of Foster and Partners in London has been chosen to design a courtyard enclosure for the Smithsonian's Patent Office Building in Washington, D.C., which houses the Smithsonian American Art Museum and the National Portrait Gallery.

The glass enclosure, estimated at $30 million, will cover the 1867 Greek Revival building's 28,000-square-foot courtyard and will be used as a gathering space for performances, receptions, installations, and special events.

The two museums—also undergoing a $116 million renovation, begun in 2001—are set to reopen in July 2006.

Lord Foster recently designed a similar enclosure for the British Museum in London and will be designing one of the World Trade Center office towers. Foster was chosen for the Washington project over a field that included Ian Ritchie Architects, Toshiko Mori, Eric Owen Moss Architects, and Guy Nordenson & Associates with Pei Cobb Freed Partners. *S.L.*

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Effort aims to stop destruction of Iraqi architectural treasures

Prompted by the tragic destruction of cultural sites in Iraq both before and during the Iraq War, the World Monuments Fund (WMF) and the Getty Conservation Institute (GCI) have announced an initiative to help stem the tide of such activity.

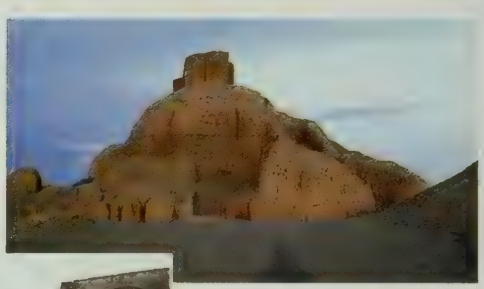
Called the CGI-WMF Iraq Cultural Heritage Conservation Initiative, the program will mobilize money, expertise, technology, and attention to help support overwhelmed Iraqi cultural authorities.

"Iraqi professionals responsible for conservation and management of these sites have been isolated and demoralized," says Timothy Whalen, director of the GCI. "We are resolved to work with them to ensure maximum impact."

The movement comes none too soon in a country that has seen an inordinate amount of its vast cultural and architectural treasures looted or vandalized in the wake of civil disorder.

"Nearly all the archaeological sites in Iraq have been given to systematic looting by the local people," says Dr. M.R. Izady, a professor of Middle Eastern history at Pace University who was recently in Iraq. Architectural treasures under threat or already destroyed in what is called the "cradle of civilization" include sites of the ancient cities of Larsa, Isin, Fara, and Umma. Thousands of other buildings and sites, such as Nippur, the heart of ancient Babylonia, and Hatra, which has a well-preserved temple precinct, are under severe distress.

Short-term measures include emergency grants for the reinstallation of protective roofing over the archaeological site at Ninevah, and for protection of sites being looted in central Iraq. Longer term mandates include the development of a National Cultural Heritage Information System and Database, used to document site conditions, set priorities, and address threats. According to the WMF and GCI, in the future—pending a safer environment for foreigners in the country—advanced training courses for Iraqi cultural professionals will be established, as well as emergency work at sites, large-scale conservation, and planning assistance. *S.L.*





Nippur (above) and Hatra (left) are among the threatened sites.

San Jose, California, to permit design-build public works

Taking a closely watched and controversial step, San Jose, California, is joining the ranks of major cities permitting design-build public works projects. A charter amendment approved on March 2 by voters in the nation's 11th-largest city authorizes design-build for projects valued at $5 million and up when the city determines that the delivery method would save time or money.

Design-build is a highly flexible delivery method with many variations, but the basic characteristic is that the owner selects a single team to provide both design and construction rather than retaining the services separately. Design-build advocates tout the potential for on-time, on-budget delivery. But some architects question the city's ability to implement design-build and worry that they could be forced to forgo their customary role as the owner's and public's advocate. On March 9, the city council authorized the city attorney to draw up an ordinance, which could take months to develop and review. "We can take some time to make sure that we do it right," says David Vossbrink, spokesman for Mayor Ron Gonzales, the charter amendment's chief backer.

In authorizing design-build for projects valued at $5 million and up, San Jose joins such California cities as San Diego, Oakland, Sacramento, and Stockton, notes David Vossbrink, spokesman for Mayor Ron Gonzales. The charter change reflects the city's determination "to make sure we get the best job, the best talent, and the best price," says Vossbrink. The city's experience on public works projects also informed its interest in design-build, Vossbrink says. ***Paul Rosta***



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Record News

Skyscraper Museum finally gets its own home

After years of borrowing space, the Skyscraper Museum—dedicated to exploring the history and future of the tall building—finally opened its own facility on April 2.



Skyscraper Museum interior.

Located in the same building as the Ritz-Carlton Hotel on the southern tip of Manhattan, the 5,000-square-foot, one-story space, designed by Skidmore, Owings & Merrill, looks much taller than it is, thanks to mirrored stainless-steel ceilings and floors. The reflective spaces are designed, notes SOM partner Roger Duffy (who collaborated with artist James Turrell), to look like "you're above a city street, 40 stories up."

Moving through the museum, one first approaches drawings, materials, and photos of some of the earliest skyscrapers, like the Woolworth, Washington Life, and Singer Buildings, built around the beginning of the 20th century. Next come presentations of more recent skyscrapers, like the Sears Tower in Chicago and, of course, the World Trade Center in New York. Finally, one arrives at displays of current and future height behemoths like (current height champion) the Petronas Towers in Malaysia, the upcoming Taipei 101 in Taiwan, the Jin Mao Building in Shanghai, and the Hearst Tower in New York.

The Skyscraper Museum was conceived of in 1996, says its director, architectural historian Carol Willis. There followed three temporary spaces and exhibitions in other museums, as well as delays after the nearby 9/11 disaster. The building took only about a year and half to plan and build. Design and engineering by SOM and construction management by Tishman were pro bono; funds came from private and public sources, and the space was donated by Millennium Partners and Battery Park City.

"A permanent home in Lower Manhattan was our dream from the start," says Willis. "These buildings are really about urban life and the urban condition. I hope we can allow people to interpret their future from learning about their past." Future exhibitions will include a dedication to the World Trade Center and a look at Frank Lloyd Wright's skyscraper projects. *S.L.*

New York housing competition tests limits of affordable design



Some interesting projects weren't considered feasible.

The New Housing New York Design Ideas Competition, sponsored this past fall by New York City, the AIA New York Chapter, and the City University of New York, called upon architects to propose dynamic new housing models for three specific city sites—in Manhattan, Queens, and Brooklyn—that could serve as prototypes for similar locations throughout the city.

Jurors selected projects based on a combination of innovation, sustainability, transferability, economic efficiency, and feasibility. The top among the more than 150 submissions were on exhibition at New York's Center for Architecture.

Winners included the Texas team of Choi Law, Clinton W. Brister, and Melody Yiu, whose angular, boxy, seven-story building in Harlem would employ up-to-the-minute technologies for recirculating rainwater and storing and harnessing solar energy. Another winner was for a site in Brooklyn by Ohio's Blostein/Overly Architects and included a pair of mid-rise buildings connected by public stairs, stoops, and sky gardens that would encourage increased social contact among tenants.

Some of the most interesting designs were arguably more daring than those of the three winners—including one design (for the Harlem site) of a building whose facade is obscured by a strangely twisted, protruding, metal-bound vertical balcony. Some jurors wondered how feasible and practical many of the ideas were, even among those that won. Nevertheless, one of the competition's eight jurors, Hugh Hardy, FAIA, a partner at New York's Hardy Holzman Pfeiffer Associates, suggests that the purpose of the competition "was not to produce building plans for buildings that would be built today, but to say 'why not?' to new ways of looking at design."
Ilan Kayatsky



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New use for Canada's former military bases: housing

Thanks to cuts in military spending after the cold war, traditional-style residential communities are being built in increasing numbers on decommissioned military bases across Canada.

These are former operationally obsolete bases throughout the country that the Canadian Department of National Defence (DND) has abandoned since 1997. They were acquired by Toronto-based Canada Lands Company Limited (CLC), which disposes of surplus federal property. It paid $60 million for the 2,429 acres.



New housing on a former military base.

CLC supervises the master planning and architectural control, and sells lots to home builders with strict design caveats. It will have invested about $149 million by 2010 in these conversions, says Gordon McIvor, the company's vice president for public and government affairs.

It works. At Garrison Woods, as the first phase of a project in Calgary unfolding on 455 acres is called, lot prices have doubled within five years, as buyers snapped up the new homes and 400 renovated cottages once occupied by military families living on the base.

Buyers are attracted by the diversity of housing types; designs (Craftsman or Prairie farm house, Tudor, Colonial, and Victorian styles); and prices, from $89,000 to $520,000; as well as 50-to-70-year-old trees preserved on the winding roads. Firms involved with Garrison Woods include Jenkins & Associates, The Cohos Evamy Partners, IBI Group, and Stantec. All firms are from Calgary.

The most recent conversions are in Alberta, where a federal Crown corporation will start offering lots for about 5,000 new homes this spring. One of them is on flat terrain where for about 60 years military training exercises and mock battles "raged"—less than 10 minutes from downtown Calgary. The other is in Edmonton. Mark McCullough, CLC's general manager of real estate, describes it as "a New Urbanist, neotraditional community, with houses closer to the street, lanes and garages at the rear, porches out front, and tree-lined sidewalks and boulevards."

While these bases aren't the greatest repositories of Canada's heritage, many elements are considered worth preserving. Kathy Milsom, CLC's president and C.E.O., says: "We commemorate names of battles on streets and create commemorative walkways with plaques and monuments wherever it is appropriate." *Albert Warson*

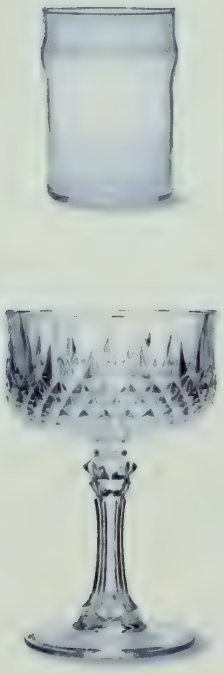
Los Angeles improves design of animal shelters



The City of Los Angeles Department of Animal Services is establishing new architectural standards for animal shelters in a concerted effort to increase the adoption rate and minimize euthanasia of homeless pets. The new centers, such as the South Central L.A. Animal Shelter (above), will be the first city-owned animal facilities in the country that integrate improved animal care and architecture. With funding from Proposition F, passed by local residents in 2000, Animal Services will gain two new shelters, replace three, and expand and renovate two existing facilities. The number of dog kennels will increase from 300 to more than 1,400 citywide, and all found and adoptable pets will be housed in comfortable environments meant to appeal to visitors on an aesthetic and emotional level.

Borrowing concepts from retail merchandising, adoptable pets will be "showcased" by utilizing natural and artificial light, color, interesting materials, and landscape. Architect Tracy Stone (Tracy Stone Architects), LEED consultant and design partner with Barton Choy (ChoyAssociates) on the North Central Animal Services Center, explains, "We want to show the animals in the best possible light and encourage interaction." Other improvements: Outdoor kennels will allow dogs and potential owners to interact in a more natural setting; skylights will lend natural light; and interior and exterior water elements, such as fountains, misters, and water walls, will create a more calming ambience and provide a natural and healthier cooling system. *Allison Mi[illegible]nis*

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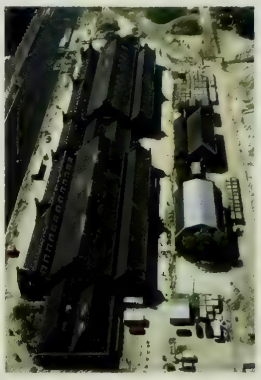
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Amsterdam converting gasworks into culture park

Space- and green-conscious Amsterdam is converting its long-closed Westergasfabriek (the Western Gasworks) into a "culture park" with a combination of cultural and community functions.

The gas plant closed in 1967, when the introduction of natural gas made the process of coal gasification obsolete. Ownership was transferred to the local district council in 1992, and in 1998 the city approved approximately $6 million for development of the gasworks as a culture park; a federal grant of 2.5 million dollars was secured for the renovation of the gas tank.



This gasworks hall will become a cultural space.

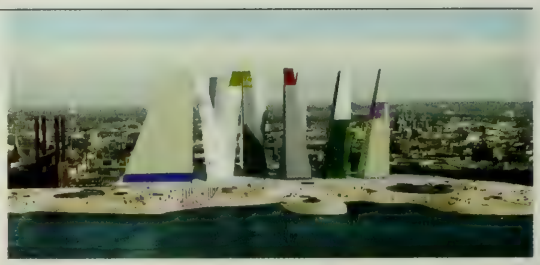
The 50-acre site, of which 12 acres are the original gasworks, contains 19 buildings, including an immense round gas tank. Thirteen of the buildings, constructed between 1885 and 1905 in a neo-Renaissance style, are protected landmarks. The renovation, expected to be completed within the coming two or three years, is being carried out by architect Yske Braaksma of Braaksma & De Roos, specialists in historic preservation.

The newest public amenity is a newly opened park by American landscape designer Kathryn Gustafson, winner of an invited competition in 1997. Her design incorporates not only grass, water, and an orchard, but also a strip of wetlands, and changes character as you move away from the city, from urban to garden to nature.

Before decisions could be made about permanent uses and tenants for the buildings, the contamination of the soil had to be tackled. A complete cleanup would have been prohibitively expensive, but by excluding residential uses and adding an additional layer of soil, cost was reduced to about $15 million. The U.S. Environmental Protection Agency recently chose the Westergasfabriek as an exemplary case of reuse of industrial heritage. *Tracy Metz*

New York dreams of future Olympic Village

In a grand gesture toward hypothetical possibilities, New York City's Mayor Michael Bloomberg in March unveiled the five finalists for a proposed New York Olympic Village, located in Queens West, along the East River, directly across from the United Nations.



MVRDV's proposal includes leaning triangular towers.

The finalists, chosen from more than 130 entries, included adventurous, avant-garde schemes that the city hopes will help direct the International Olympic Committee's attention toward the city's bid to host the 2012 games. The finalists were: Henning Larsens Tegnesture A/S (HLT) of Copenhagen, Denmark; MVRDV of Rotterdam, the Netherlands; Morphosis of Santa Monica, California; Smith-Miller + Hawkinson Architects of New York; and Zaha Hadid Architects of London.

The proposed site will house 16,000 people, mostly athletes, and if built will be used for permanent housing after the completion of the games. The project will be overseen by the Queens West Development Corporation and is a joint project of the state, city, and the Port Authority of New York and New Jersey.

HLT's design involves massive, twisting glass towers and canals that make the site a "little Venice." MVRDV, meanwhile, proposes triangular towers, some of which lean on each other for support. Morphosis's design involves both highly sculpted land and buildings, 43 acres of open space, and the largest urban waterfront park in the city. Zaha Hadid Architects utilizes liquid forms to create almost translucent housing towers that will be monuments in themselves. Finally, Smith-Miller + Hawkinson presents a more conventional (for this competition) design that includes five slender river towers in an ecofriendly environment. The city won't find out if it wins its Olympic bid until July 2005, but the winning design, slated for late May, will be submitted to the Olympic Committee on November 15. *S.L.*

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Record News



The Royal Albert Hall (left) and the London Coliseum (right) were revamped inside and out.

Makeovers for two cherished London theaters

Two of London's best-loved performing arts venues—the London Coliseum and the Royal Albert Hall—have had major makeovers, restoring elements that had long been deteriorating while allowing the halls to compete technically with more modern theaters around the country.

The London Coliseum, home of the English National Opera, which originally opened in 1904, reopened on February 21 after a $75 million, four-year restoration. Architects RHWL have returned the building's imposing friezes and figures to their original 1904 color scheme of imperial purples, Italian reds, and shades of gold and cream. The front-of-house areas have been expanded by 40 percent, their marble and mosaics have been restored, and the original terra-cotta figures on the facade have been recast. A new curved glass roof creates an airy double-height space overlooked by a new Balcony Bar/foyer with views of Trafalgar Square and the Coliseum's distinctive floodlit tower, whose globe will revolve for the first time

Meanwhile, a 10-year, $129 million program of redevelopment has restored the Royal Albert Hall—originally completed in 1871—to its original glory. Building Design Partnership was commissioned in 1990 to devise a master plan and has been the lead architect, engineer, and cost consultant. The auditorium, gallery, foyers, and public circulation areas have been redecorated, restoring original tiled floors. The Dome's decorative plasterwork, destroyed in the 1940s, has been replaced, patent glazing installed, and its roof overhauled. The South Steps' stonework and balustrades have been restored, and circulation, landscaping, as well as ventilation and cooling have been improved. The acoustics now replicate those of the original hall. At the South Porch, 7,500 terra-cotta bricks of more than 800 shapes and designs were used, each hand-modeled to reproduce original details documented in the hall's archives. *Lucy Bullivant*

Architect Pierre Koenig dies





Pierre Koenig (far right), FAIA, renowned for his role as one of the Los Angeles–based Case Study Program architects, died on April 4.

Born in 1925 in San Francisco, Koenig later moved to Southern California, where in the late 1950s he became a designer for the Case Study Program, established in Los Angeles in 1945 by John Entenza, editor of the avant-garde magazine *Arts & Architecture*. Case Study became an effort to offer the public models for low-cost housing in the Modern style and produced masterpieces by Richard Neutra, Craig Ellwood, Thornton Abell, Charles Eames, and Eero Saarinen.

Koenig created the iconic Case Study Houses #21 (1958) and #22 (1960, above left), both simple, elegant cubes of glass and steel. Perched in the Hollywood Hills, both came to represent the "glamorous" indoor/outdoor lifestyle of Los Angeles. Case Study House #21 was awarded the American Institute of Architects California Council 25 Year Award in 2001.

Prior to Case Study, Koenig established his own practice, in 1952, designing over 50 buildings. He also taught at the USC School of Architecture for more than 40 years and was named both a distinguished alumnus and distinguished professor in 1998. He received the Gold Medal from the American Institute of Architects/Los Angeles Chapter in 1999. "Pierre Koenig never wavered from his beliefs," says Robert Timme, FAIA, dean of the School of Architecture at USC. "He became a global celebrity. Graduate students from all over the world would come and ask if they would have the chance of meeting him." *S.L.*





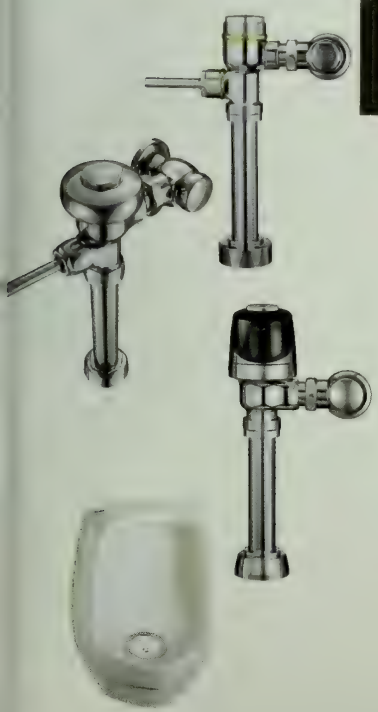
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New arts venue to be built on site of famed Crystal Palace



Plans for an arts venue, the first new building on the long-neglected site of Joseph Paxton's visionary 19th-century Crystal Palace in South London since it burnt down in 1936, have been revealed by London-based Wilkinson Eyre Architects. At 490 feet long and elevated 175 feet above the ground, the innovative, mostly-glass scheme provides a vantage point for a planned sculpture park and will restore the name Crystal Palace to its position as an internationally renowned cultural focal point in the city.

The venue, which will be paid for by fund-raising from the Crystal Palace Campaign committee, will be positioned on the site of Paxton's original palace transcept. Visitors will enter via a moving stairway, from where they will experience a 50,000-square-foot exhibition space for changing displays. A mezzanine above will contain restaurants and bars.

Acknowledging the first Crystal Palace's makeup, the structural materials will be largely glass, with sculptural ribs supporting a laminated glass grid shell; steelwork will be used solely for the decks within the enclosed space. An intelligent skin of photovoltaic cells will provide solar shading and collect solar energy to power the building. *L.B.*



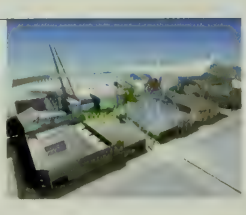
New urban park set for downtown Milan

A competition for a new urban park in the center of Milan, held by the City Council, has been won by Dutch landscape and interior designer Petra Blaisse's Amsterdam-based practice Inside Out.

Sited between the Centrale (main) and Porto Garibaldi railway stations, the park was informally dubbed "the garden of the new door" by the competition board, as the area is a junction between business and cultural buildings and residential areas to the north. The winning concept renames the park Biblioteca degli Alberi (Library of Trees). A rich and varied mix of botanical gardens, orchards, six public squares, pavilions for events, circular groups of trees, and areas of water will be interlaced with paths, six of them 14-feet-wide and 17, 7-feet-wide. Each path is to be made of a different material, including asphalt, black concrete, and wood, with information about the park, shrubs, and local amenities printed on some of the surfaces.

Ms. Blaisse says that the future park will be the "beating heart" of the district and will serve as a new community meeting point and cultural campus for festivals and fashion shows in this style center. *L.B.*

Expansion of D-Day Museum unveiled



Bartholomew Voorsanger, FAIA, of Voorsanger & Associates Architects in New York, recently presented his firm's designs for the expansion of the National D-Day Museum in New Orleans.

The current 70,500-square-foot museum, which focuses primarily on the invasion of Normandy, began in a renovated brewery in the Warehouse District of New Orleans, not far from where the Higgins Boats—the landing craft that allowed U.S. troops to successfully attack from the sea—were manufactured. The more ambitious 300,000-square-foot project (rendering, right) will take over two additional city blocks to the south.

The existing structure will become just one of several connecting pavilions, each of which will present a different chapter in the long and complex story. The pavilions surround a raised open-air terrace, which will be landscaped according to the varied terrain faced by soldiers fighting at the different fronts. Floating serenely over this outdoor space is a translucent, Teflon-coated canopy that provides shelter from rain and sun. Reminiscent of a dove's wing, it appears to offer solace and healing from the cacophony of war below.

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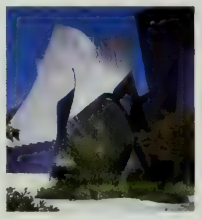
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CIRCLE NO. 30

News Briefs

Walt Disney Concert Hall causing glare problems Neighbors of the Disney Concert Hall in Los Angeles are getting an eyeful—of glare, that is. Shortly after construction was completed on L.A.'s new premier project, Music Center officials received complaints from residents at nearby Promenade Tower about the intensity of the sunlight being reflected off the north side of the complex. While the main structure is sheathed in dull stainless steel, the panels covering the Founder's Room are polished to a mirror finish.



Temporary shield from the glare in L.A.

In an effort to provide temporary relief, a construction screen was installed over the troublesome area while a glare study is being conducted in a test environment. The study has been helpful in providing what appears to be the best solution: According to Terry Bell, a partner at Gehry Partners and project architect on the hall, sandblasting the panels should resolve the problem by greatly diffusing the glare. The process is relatively quick and inexpensive. "I'd like to see the study conducted at the June equinox," commented Dawn McDizitt of the Los Angeles County Chief Administrative Office, Capital Projects Division. "I just want to make sure it will work at all times of the year before we do the job." *Allison Milionis*

Green building gets star treatment The Natural Resources Defense Council's (NRDC) new Santa Monica office has attracted a star following. Named the Robert Redford Building after its major donor, the building recently earned a top platinum LEED rating from the U.S. Green Building Council (USGBC). Its ground-floor attractions, the David Family Environmental Action Center and the Leonardo DiCaprio e-Activism Zone, were dedicated in January by actor DiCaprio and TV producer Laurie David, wife of Seinfeld creator Larry David.



DiCaprio (center) and David (right) at the NRDC opening.

Designed by Moule & Polyzoides Architects and Urbanists of Pasadena, the building has three atria to bring in natural light. It will use 60 percent less water than comparable buildings, and 20 percent of its electricity is generated by rooftop solar panels. The ground floor features exhibits on issues like water pollution and global warming, and a small retail store for eco-friendly clothing and outdoor gear. "The value of this building as a demonstration project cannot be overstated," said Christine Ervin, USGBC's president, at the January dedication. *Deborah Snoonian, P.E.*

Sound and architecture merge in festival New York City Community arts group The Kitchen, Cooper Union School of Architecture, and *Time Out* magazine helped host New Sound, New York, a six-week festival of performances, public lectures, and sound-art installations in March and April. Architects were paired with musicians to discuss their fields' relationships. Participants included DJ Spooky and Greg Lynn, Phillip Glass and Thom Mayne, Laurie Anderson and Martha Schwartz, and Moby and Bernard Tschumi. The festival also featured three-dimensional sound structures, such as Charlie Morrow's Sound Cube—a multichannel playback environment providing a 3D audio experience. *S.L.*

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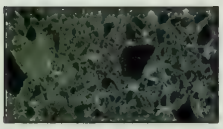
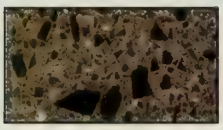
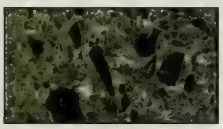
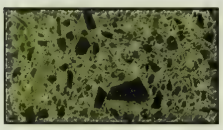
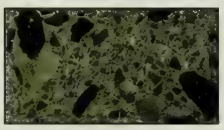
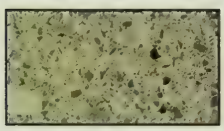
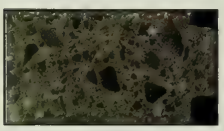
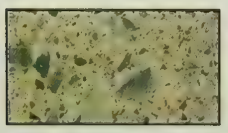
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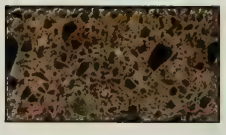
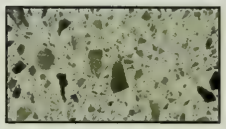
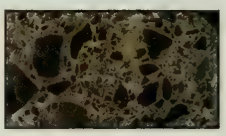
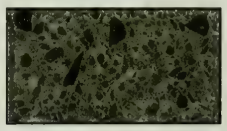
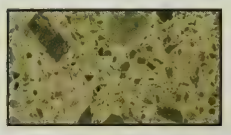
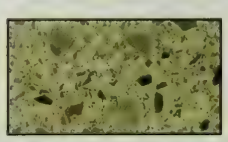
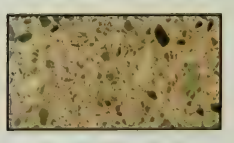
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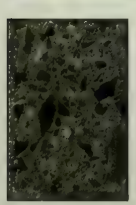
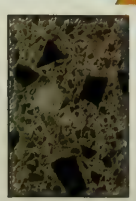
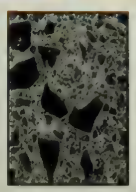


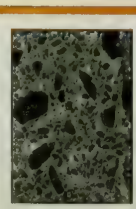
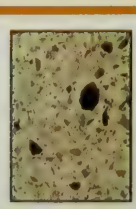









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Dates & Events

New & Upcoming Exhibitions

Both/And 04-Shaping History: Architecture, Historic Contexts, and the Cityscape Transformed
Seattle
May 1–30, 2004
The focus of this exhibition is to feature modern architectural insertions in historic contexts that, in one way or another, act to transform or affect the surrounding cityscape and city life. At the AIA Seattle gallery. Call 206/448-4938 or visit www.aiaseattle.org.

Rene Burri Photographs
New York City
May 5–June 5, 2004
The exhibition focuses on Burri's architectural photographs, including images of Le Corbusier and his work, such as the Chapel at Ronchamp; the structures of Mexican architect Luis Barragan; Oscar Niemeyer's buildings in Brasilia; and the preparations for the Montreal Expo in 1967. At the Gallery at Hermes. Visit www.hermesofparis.com.

Solos: Future Shack
New York City
May 14–October 10, 2004
Architecture for Humanity's Future Shack is a shelter that can be constructed anywhere, very quickly, to address the needs of refugees as well as of victims of natural disasters. Designed by Australian architect Sean Godsell, the prototype will be built in the Cooper Hewitt's Arthur Ross Terrace and Garden as part of the summer *Solos* series. At the Cooper-Hewitt, National Design Museum. Call 212/849-8400 or visit www.cooperhewitt.org.

Samuel Mockbee and the Rural Studio: Community Architecture
Washington, D.C.
May 22–September 6, 2004
Both a practical program for educating future architects and a vital force for improving living conditions in one of the nation's poorest regions, Auburn University's Rural Studio began with the drive and vision of Samuel Mockbee (1944–2001), who was posthumously awarded the 2004 AIA Gold Medal. The exhibition includes both models and photographs of the projects, as well as a number of Mockbee's paintings and sketchbooks from the Rural Studio. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Ongoing Exhibitions

From House to Home: Picturing Domesticity
Los Angeles
Through May 17, 2004
The exhibition reveals contemporary artists' varied investigations of home—the house structure, its material components, and the complex range of narratives embodied by its physical space. At MOCA at the Pacific Design Plaza. Visit www.pacificdesigncenter.com.

D.C Builds: The Anacostia Waterfront
Washington, D.C.
Through May 23, 2004

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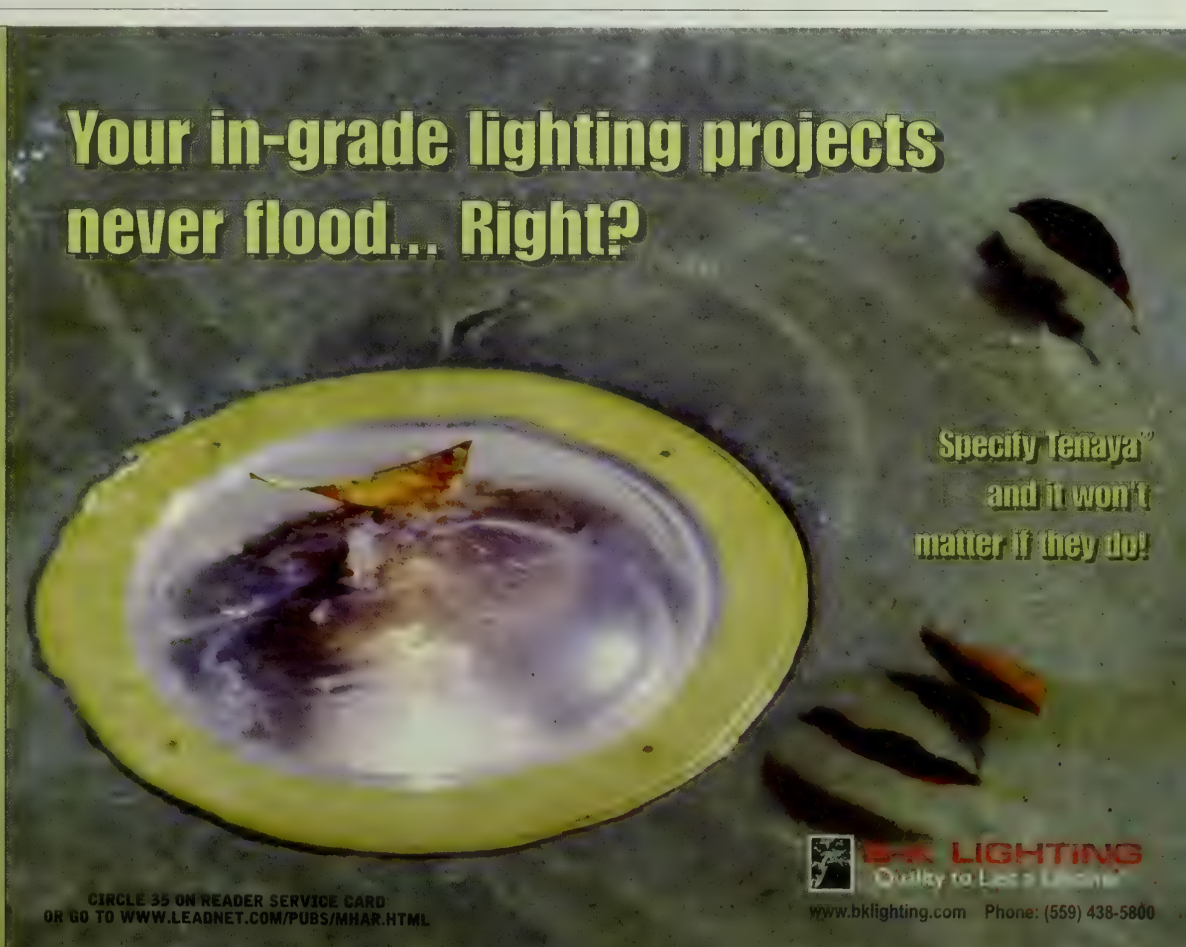
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Dates & Events

This exhibition examines the great potential of the Anacostia waterfront to become a valued civic amenity. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Cecil Balmond
Bordeaux, France
Through May 25, 2004
This show celebrates Balmond's inspiring solutions, which fuse architecture and engineering. Visitors can view the engineering of contemporary buildings designed by revered Modern architects—Koolhaas, Ito, Libeskind, and Siza—with whom Balmond has collaborated. At arc en rêve centre d'architecture. For information, visit www.arcenreve.com.

Italian Mosaic Design
Brooklyn, N.Y.
Through May 31, 2004
The history, innovation, and contemporary uses of glass mosaics will be the subject of this exhibition at UrbanGlass. The show focuses primarily on Italian mosaic design, in particular the creations of Vicenza-based Bisazza Mosaico, considered to be the world's leading producer. At the Robert Lehman Gallery. Call 718/625-3685 or visit www.urbanglass.org.

Envisioning Architecture: Drawings from the Museum of Modern Art, New York
Washington, D.C.
Through June 20, 2004
The broad spectrum of 20th-century architecture and the depth of its artistic expression are revealed in this selection of works from MoMA's extraordinary collection of architectural drawings. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Lectures, Conferences, Symposia

Indoor Air Quality Symposium: Design, Construction, and Management of Buildings
Boston
May 7, 2004
A national symposium for architects, engineers, building owners, contractors, and public officials that will include addresses by a building scientist and legal experts, nine workshops focused on indoor air quality, and an award for significant contributions to the control of indoor air quality. At the Boston Society of Architects/AIA. For infor-

mation, visit www.architects.org/IAQsymposium.

Building with Stone: Granite and Marble for Architectural Exteriors and Monuments
Cambridge, Mass.
May 8–9, 2004
This symposium will explore technical and practical issues involved in the use, performance, and care of granite and marble in buildings, monuments, outdoor sculpture, tombstones and grave markers, and similar structures. Lectures will focus on quarrying, selection, specifying, evaluating, fabrication, detailing, and repair and maintenance of stone. Call 617/623-2253.

Richard Rogers: Architecture and Sustainability
Washington, D.C.
May 10, 2004
In an exclusive Washington lecture, Richard Rogers will discuss his firm's research and design of intelligent, energy-efficient buildings such as the Bordeaux Law Courts, Lloyd's Register of Shipping, and the environmentally friendly urban designs for Berlin and Shanghai. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Will Bruder
Washington, D.C.
May 12, 2004
Architect Will Bruder explores inventive forms and compositions while responding thoughtfully to each project's physical context and the client's needs. Principal of the Phoenix-based firm Will Bruder Architects, he will discuss his award-winning work, including the Riddell Residence in Wilson, Wyoming, the Phoenix Central Library, and the Nevada Museum of Art in Reno. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

The 30th Annual Wright Plus House Walk
Oak Park, Ill.
May 15, 2004
Featuring Frank Lloyd Wright's Harry S. Adams House, visitors will also have access to seven other private residences designed by Wright and renowned contemporaries, as well as three architecturally significant public structures: the Frank Lloyd Wright Home and Studio, Unity Temple, and the Frederick C. Robie House. Call 708/848-1976 or visit www.wrightplus.org.

The International Contemporary Furniture Fair (ICFF)
New York City
May 15–18, 2004
Raw: The Next Generation is an exhibition of emerging designers that will highlight many of the most promising talents to recently appear on the international design landscape. At the Jacob K. Javits Convention Center. Visit www.icff.com.

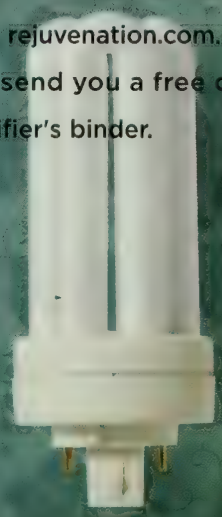
Linking Land Use, Transportation, Economy, and the Environment
Washington, D.C.
May 17, 2004
The Thomas Jefferson Planning District Commission in Charlottesville, Virginia, has successfully integrated grass-roots planning and the regional transportation process, incorporating lessons from smart growth, New Urbanism, and healthy communities to meet the goals of diverse partners. Harrison Rue, the group's executive director, will discuss these techniques and demonstrate how Charlottesville offers lessons to other communities. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Lindy Roy
Washington, D.C.
May 17, 2004
Principal of New York–based ROY, the South Africa–born architect will discuss her studio's work, including a resort project in Africa, the Vitra showroom in New York, and the Wind River Lodge in Valdez, Alaska. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Great Chicago Places and Spaces
Chicago
May 21–23, 2004
The weekend celebrates Chicago's renowned buildings, structures, homes, parks, landscapes, neighborhoods, and hidden treasures with more than 160 free tours and programming geared to the city's architecture and design. Call 312/744-3315 or visit www.cityofchicago.org/specialevents.

Victor Gruen: Mall Maker
Washington, D.C.
May 24, 2004
The shopping mall has been criticized for much that is wrong with America—sprawl, conspicuous consumption, the loss of regional character, and the decline of "Mom and Pop" stores. Author M.

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Dates & Events

Jeffery Hardwick will discuss how the mall was born of an idealized vision of America by immigrant architect Victor Gruen. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Introduction to the 2003 International Building Code for Design Professionals
Madison, Wis.
May 24–25, 2004
This course will benefit architects, engineers, planners- and designers-in-training, developers, builders, and others who use building codes in the planning and design of facilities for human occupancy. At the University of Wisconsin-Madison, Department of Engineering Professional Development. Call 608/262-0638 or visit www.epdweb.engr.wisc.edu/WEBF897.

Design Source New England
Boston
May 25, 2004
The American Society of Interior Designers (ASID) is holding workshops, lectures, and a trade show showcasing top providers of products and services to the design field featuring keynote speaker Michael Payne, host of *Designing for the Sexes*. At the World Trade Center Boston. Visit www.asidnewengland.com.

Keeping Housing Affordable in Washington
Washington, D.C.
May 25, 2004
The hot real estate market in the D.C. metropolitan area has led to skyrocketing home prices, making the opportunities for affordable homeownership increasingly more difficult. To complement the exhibition *Affordable Housing*, the show's cocurator Ralph Bennett, of the University of Maryland, will moderate a panel discussion that explores the challenge of creating and maintaining affordable housing in our highly volatile real estate market. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Sustainable Urban Design for the 21st Century
Washington, D.C.
May 27, 2004
In a recent competition, urban planners, architects, engineers, and managers from nine nations collaborated to create new models for sustainable community development. Doug Newman, manager of sustainable energy planning at the Gas Technology Institute and a member of the U.S.-Mexico design team, will present these models. At the National Design Museum. Call 202/272-2448 or visit www.nbm.org.

COTE: Top Ten Green Buildings 2004
Washington, D.C.
May 27, 2004
Each year, the American Institute of Architects' Committee on the Environment (COTE) invites architects to submit sustainable designs for the annual Top Ten Green Projects competition. Mark David Rylander, AIA, the 2004 AIA COTE Chair, will present this year's winners. At the National Building Museum. Call 202/272-2448 or visit www.nbmorg.

The 16th Montreal International Interior Design Show
Montreal, Canada
May 27–29, 2004
This show (SIDIM) will bring together the whole Quebec interior design community, as well as architects, engineers, contractors, developers, buyers, retailers, business people, government representatives, and a contingent of upscale consumers. Visit www.sidim.com.

On Both Sides of the Wall
Berlin and Potsdam, Germany
May 27–29, 2004
The Berlin Wall is perceived around the world as an icon and metaphor of the cold war. This symposium aims at fostering a wider awareness of the diversity and significance of monuments of the cold war in countries that belonged to NATO and to the Warsaw Pact, as well as in neutral states. At Cecilienhof Palace, Potsdam. For information, visit www.tu-cottbus.de/coldwar/.

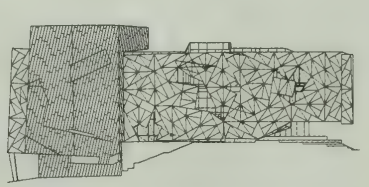
International Greening Rooftops for Sustainable Communities Conference, Awards, and Trade Show
Portland, Ore.
June 2–4, 2004
Experts in diverse fields from around the globe will network and share knowledge about the benefits of green roofs, new research findings, policy developments, and the latest in green-roof products and services. Topics covered in panel discussions will include LEED, plant performance, policy initiatives, smart growth, biodiversity and agriculture, storm-water issues, and design. At the Hilton Hotel. Call 416/686-5887 or visit



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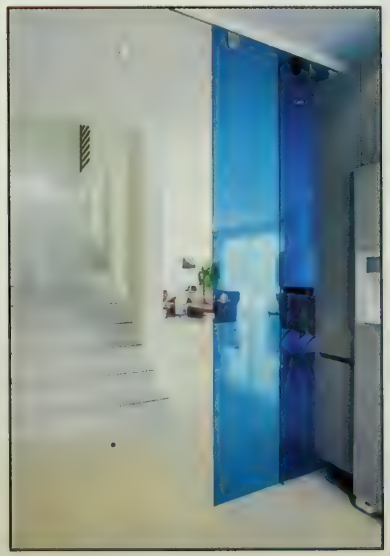
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www.greenroofs.ca/grhhc/conference.htm.

The 2004 Bruce Goff Centennial Celebration
Bartlesville, Okla.
June 5–8, 2004
The 100th anniversary of the birth of Bruce Goff and the 137th of Frank Lloyd Wright will be celebrated by viewing buildings of both Goff's and Wright's design, films of Goff, architectural and other drawings of Goff's, and exhibitions of work by those who learned from him. For further information, call 404/237-8031.

Security Workshop
Franklin Park, Ill.
June 7–10, 2004
YSG Door Security Consultants, an architectural hardware and security solutions company, is offering a Security Workshop to provide participants a better understanding mechanical security and electrified hardware to develop a fully integrated locking security system. At the YSG Satellite Training Center. Call 800/438-1951 or visit www.ysgsecurity.com.

The Mediterranean Medina
Pescara, Italy
June 17–19, 2004
An International Seminar aiming at the study of the particular physical characters and the main transformations of the Mediterranean City. The city has built up its identity through the reuse and modification of the previous urban remains. At the Faculty of Architecture of Pescara. Visit www.unich.it/idea.

Competitions

Norwalk Housing Design Competition
Norwalk, Conn.
Deadline: August 13, 2004
In response to the need for below-market-rate housing in the city of Norwalk, the Housing Authority of Norwalk is sponsoring a housing design competition for exemplary site and unit plans for first-time home buyers, entry- and mid-level professionals, and fixed-income seniors. Call 203/857-0200 or visit www.swinter.com/NorwalkHousingDesignCompetition.html.

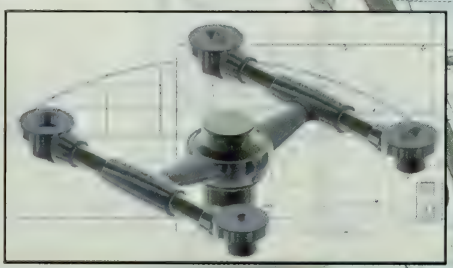
E-mail events and competitions information to ingrid_whitehead@mcgraw-hill.com.

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Park Tower, Costa Mesa, CA
Murphy/Jahn Architects

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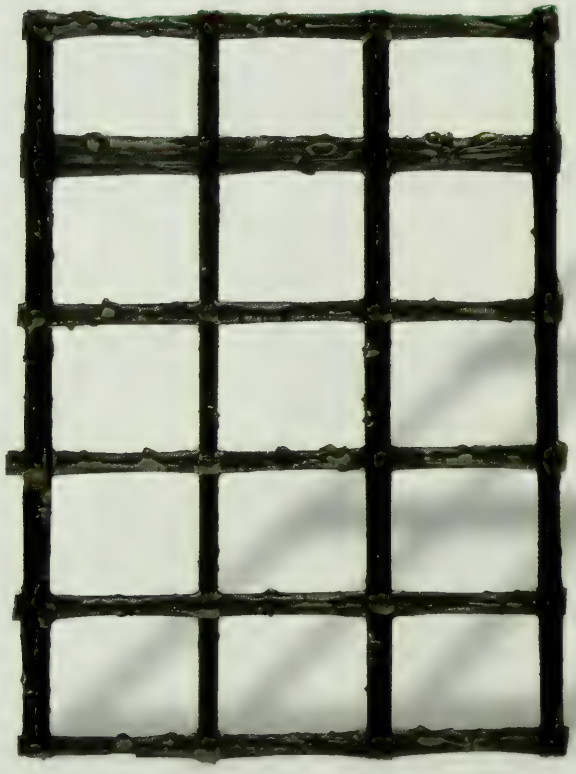
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For and about the new generation of architects

archrecord2

FOR THE EMERGING ARCHITECT

This month, archrecord2 zooms in on the life and work of Chicago-based architect Ammar Eloueini. In Design, we explore Eloueini's Digit-all Studio. In Work, we move to another midwestern locale, Minneapolis, to learn about Mohammed Lawal's commitment to a volunteer program that inspires high school students to study architecture. Visit architecturalrecord.com/archrecord2 for more on Eloueini's projects, as well as recent graduation photos from the Architectural Youth Program.

DESIGN

A Digit-all connection



Ammar Eloueini wants to prove that digital architecture is realistic in the nondigital realm. He explains, "There's been so much debate about the box versus the blob—but architects are now proving that architecture conceived on the computer can be completed successfully and completed in interesting ways." As chair of the Digital Media Program at the University of Illinois at Chicago's School of Architecture and founder of Digit-all Studio, Eloueini aims to demonstrate by example that "different architecture with different sensibilities" is capable of being built.

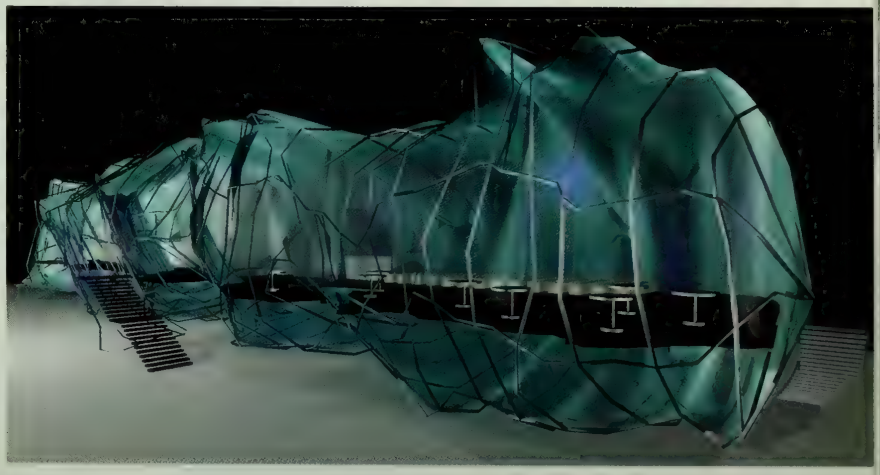
Eloueini, originally from Lebanon, studied at the Ecole d'Architecture in Paris. Before his licensure in 1994, he traveled around the U.S. and became interested in the advanced architectural design degree offered by Columbia University. "Being part of the paperless program taught by Gregg Lynn and Hani Rashid was a fantastic experience," relates Eloueini. "I was one of 45 students with varied backgrounds [who were] all interested in exploring the new theory of digital media in architecture."

After completing the Columbia program in 1996, Eloueini returned to Paris. "I found New York to be too congested," he explains. "Going back to Paris allowed me to bring these new ideas and practices to Europe at a time when digital media was done by practically no one else." He formed the Digit-all Studio in 1997 and made a name for himself as one of the few digital media–savvy architects in Europe, by turns teaching, exhibiting his work, and entering international competitions for designs like the New York Cultural Exchange Information Center and the Sarajevo Concert Hall.

When he was offered a teaching position at UIC in 1999, Eloueini also received a grant from the French Ministry of Culture to display his work, a coup that convinced him to maintain a presence in Europe and the U.S. His dual-continent firm has been awarded many commissions since his move. In a fortuitous turn of events, the avant-garde fashion designer Issey Miyake opened a boutique next door to the Parisian gallery where Eloueini had a solo exhibition. Impressed with



Issey Miyake store concept
Eloueini proposed the use of overlapping opaque and translucent strips of material, in varying widths, to create an adaptable retail space that could be implemented as a boutique within department stores.



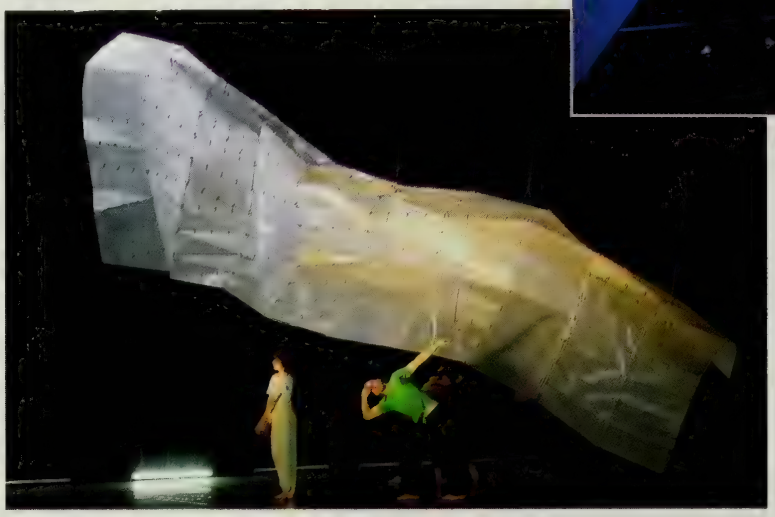
Cultural Exchange Information Center, New York City, 1997
With this submission, Eloueini strove to realize the viability of his computer-generated architecture. Engineers studied this entry and agreed it would be buildable and structurally sound.

Eloueini's work, Miyake initiated discussions with the architect, which led to a project to develop a new concept for his retail spaces. Since Miyake is known for his innovative use of fabrics, Eloueini is following suit by researching materials to be used in unconventional forms.

In 2001, Eloueini was awarded the prestigious Nouveaux Albums des Jeunes Architectes, the French Institute of Architect's highest recognition awarded to architects under 35. Since then, he has been creating projects that have leaped from the digital to the real world. Collaborating with New York–based choreographer John Jasperse, Eloueini created a stage set for the piece *California* that was not simply a backdrop but a structure that could morph and become part of the performance. The complex structure, whose form was generated by advanced CAD tools, took shape through the use of polycarbonate forms connected by zip ties. Its construction allows the touring company to easily disassemble and transport the set as they travel. Eloueini's work will also be seen this June at the Museum of Contemporary Art in Chicago, where he was commissioned to design an upcoming exhibition, *Skin Tight*, featuring the works of 10 international fashion designers. *Randi Greenberg*

Go to *architecturalrecord.com/archrecord2* for more on Eloueini's projects and design entries. Also learn how to submit your own projects.





Stage set for John Jasperse Company, 2003–2004
This flexible, movable set becomes an interactive element in one of the dance company's pieces. The translucent polycarbonate panels absorb and diffuse light.

WORK

Encouraging architectural futures

When Mohammed Lawal was a child, he thought he would become an artist but realized that "with architecture, I could take my love of drawing and put it into this vocation." His choice has reaped benefits not only for the firm KKE, where he's a principal, but also for hundreds of inner-city youth in the Minneapolis area.

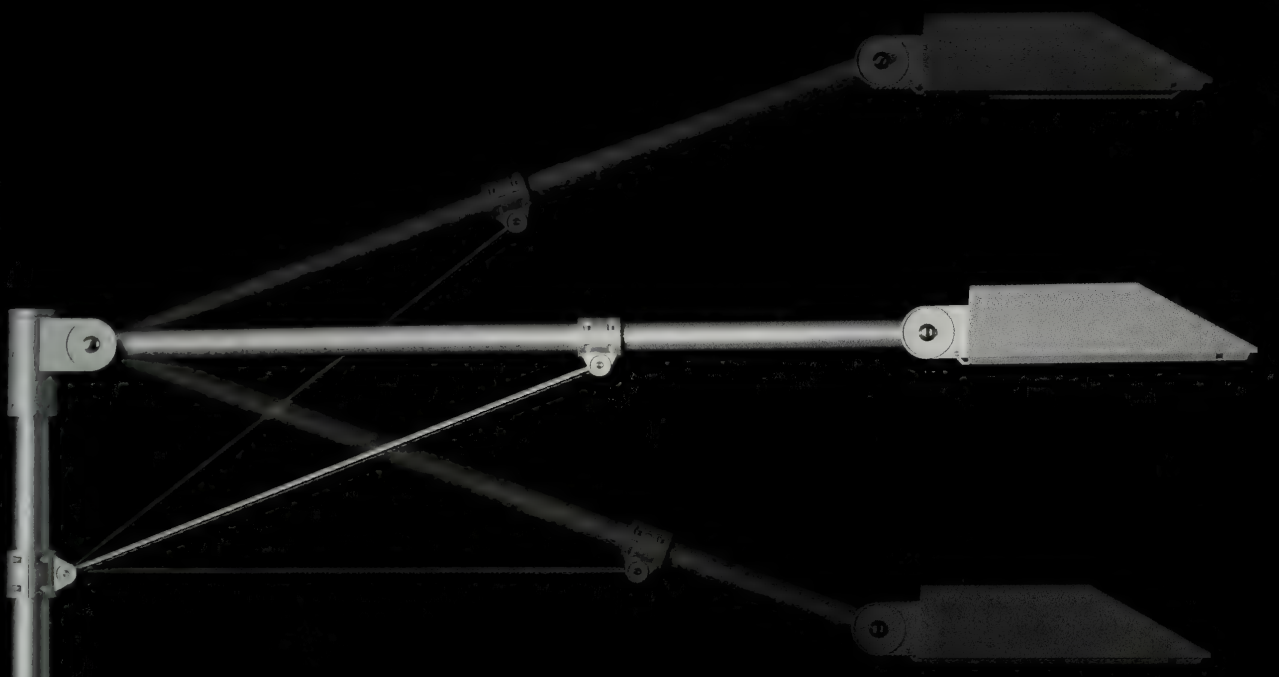


Lawal, who studied architecture in both Nigeria and the University of Minnesota, cofounded the Minneapolis branch of an outreach effort called the Architectural Youth Program (AYP) with colleagues Jennifer Anderson-Tuttle and Joshua Weinstein (who'd founded the pilot program in New York). AYP is an after-school course introducing high school students to architecture and related fields through lectures, field trips, and a charrette exercise. By the end of the 12-week class, students design their own project based on a theme, such as pedestrian bridges or trolley stops.

Financial support for AYP comes from the University of Minnesota's College of Architecture and Landscape Architecture, but as Lawal points out, other crucial support stems from the college as well—the students. "CALA students serve as mentors to the AYP students during the daylong model-making charrette. It's a great role reversal for CALA students to apply what they've learned, and the AYP scholars have the opportunity to learn from current architecture students."

The program has made inroads: Many of Lawal's AYP students have gone on to study architecture, and one of his first students is now an intern architect at KKE. It might seem that Lawal, after 10 years of intensive volunteering and having received the AIA's Young Architects Award in 2002, could ease up on his participation in AYP, but it hasn't happened yet. "I recently came back from our offices in California, where we're looking to start an AYP program," he says. "Every year I think I'm not going to be as heavily involved with the program, and every year I find myself greeting a new group of students." *R.G.*

For more on AYP's recent graduation, visit *architecturalrecord.com/archrecord2*



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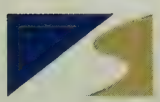
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Will Chicago's long-awaited Millennium Park be fine art or spectacle? Perhaps a little of both.

Correspondent's File

By Blair Kamin

Chicago is famous, or maybe infamous, for doing things big and promoting them with blasts of press-agentry that would make even "The Donald" blush.

Before the city won the heated competition to host the 1893 World's Columbian Exposition, *New York Sun* editor Charles Dana tagged it with the nickname "Windy City," a reference not to the breezes that blow off Lake Michigan, but to the gusts of hype with which Chicago's boosters were selling the Midwestern metropolis.

More than a century later, Chicago is still building—and talking—big. This July, the city will open Millennium Park, an ambitious, controversial, 24-acre combination of old-fashioned world's fair and new-fangled cultural spectacle.

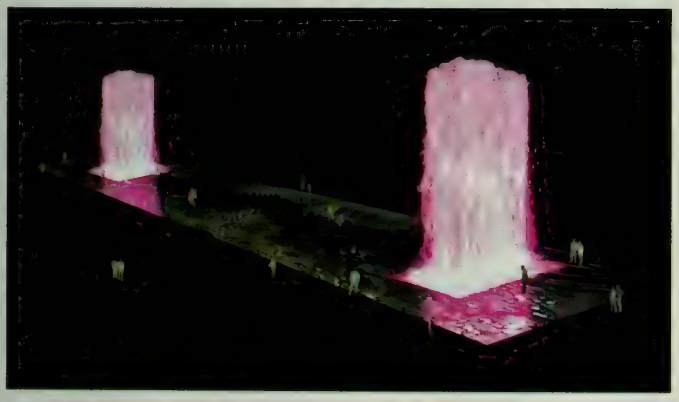
Blair Kamin is the Pulitzer Prize–winning architecture critic of the Chicago Tribune.

City officials expect the park, which sits along the cliff of skyscrapers that line Michigan Avenue, to attract 2 million to 3 million visitors a year. Costing $450 million (three times the original price tag), Millennium Park is funded by the city, major corporations, and Chicago's wealthiest families, including the Pritzkers and the Crowns. Its centerpiece consists of a Frank Gehry, FAIA–designed music pavilion and trellis-covered outdoor seating area, plus a snaking bridge, Gehry's first.

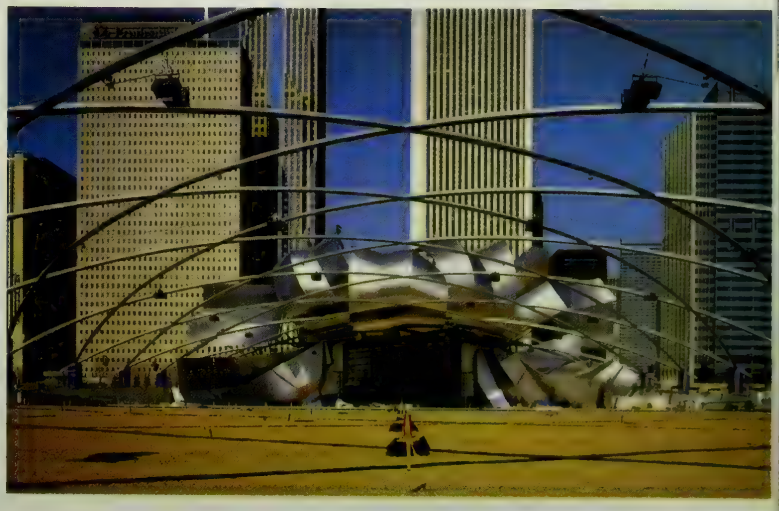
Among its other attractions: a monumental, jelly-bean-shaped stainless-steel sculpture by London-based Anish Kapoor; a fountain by Barcelona artist Jaume Plensa, which will have water cascading out of two steel towers; and a garden by Seattle's Kathryn Gustafson, with muscular hedges that evoke the Chicago tradition of "broad shoulders."

In a distinct echo of that Windy City boosterism of 1893, one press release calls Millennium Park "a monumental step toward continuing the city's renowned heritage as the architecture capital of the world." Maybe. I've also heard it described as a Disneyesque, donor-driven tourist trap and a colossal missed opportunity to advance the state of contemporary landscape design.

Who's right? It's impossible to assess the various pieces—and whether they all hang together—until the park is finished. Even so, it's a sure bet that Millennium Park will be the talk of the AIA convention in Chicago in June. By that time, much of the project will have taken shape, giving visiting architects something at which to aim their cameras as







The park will include a luminous fountain by Jaume Plensa with Krueck & Sexton (above left), a highly reflective sculpture by Anish Kapoor (below left), and a twisting, metallic music pavilion by Frank Gehry (below right).

they indulge in the real point of coming to Chicago: eyeballing firsthand the city's architectural mother lode.

Since Chicago's mayor, Richard M. Daley, unveiled Skidmore, Owings & Merrill of Chicago's original plan for Millennium Park in 1998, its design has been drastically revised, along with its deadline and budget. The original completion date, the year 2000, proved wildly unrealistic. Meanwhile, the $150 million budget was quickly busted after city officials and civic leaders decided that Skidmore's plan—a Beaux-Arts park, outdoor concert venue, and garden to be built atop an underground parking garage—was, well, not very millennial.

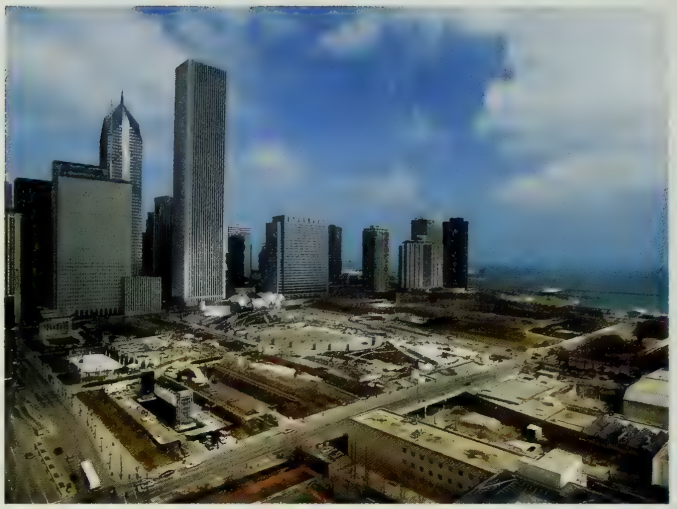
So the park was designed on the fly, with the contemporary elements plugged into the Beaux-Arts template. But some of these additions, including the Gehry pavilion and the heavyweight Kapoor sculpture (it weighs 110 tons), forced the city to bulk up the parking garage structure beneath the park, causing delays and millions of dollars in change orders. Jokes began: "In what millennium will they finish Millennium Park?" Project supervisor Edward Uhlir, who has become the park's de facto planner, acknowledges, "It was definitely a work in progress." Of the $450 million cost, he says, the city's share is $270 million, with private donors picking up the balance.

For all the controversy surrounding it, Millennium Park has helped spark a dramatic urban transformation. The park has eliminated a longtime eyesore, an open pit in the northwest corner of elegant, 323-acre Grant Park that offered passersby the incongruous sight of working railroad tracks and a surface parking lot. Now that the city has completed the engineering feat of building the greensward over the still-working tracks, new condominium towers are rising nearby. In another sign of the park's pull, the Art Institute of Chicago shifted a planned addition by Renzo Piano from its south flank to its north end, right next to Millennium Park and its 2,186-space garage.

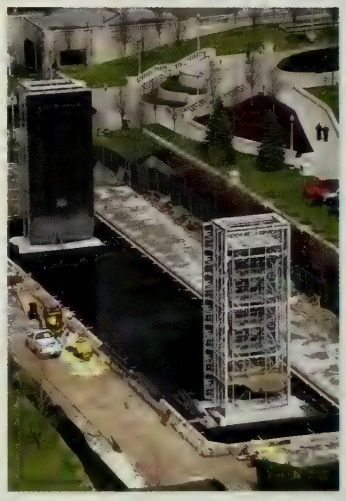
On a recent tour of the park, undoubtedly the first of many efforts to promote it, Uhlir led journalists past a completed skating rink along Michigan Avenue that provides a stunning view of the city skyline. Then it was on to unfinished attractions, such as Plensa's fountain, where video screens mounted on the two steel towers will project the faces of 1,000 randomly selected Chicagoans.

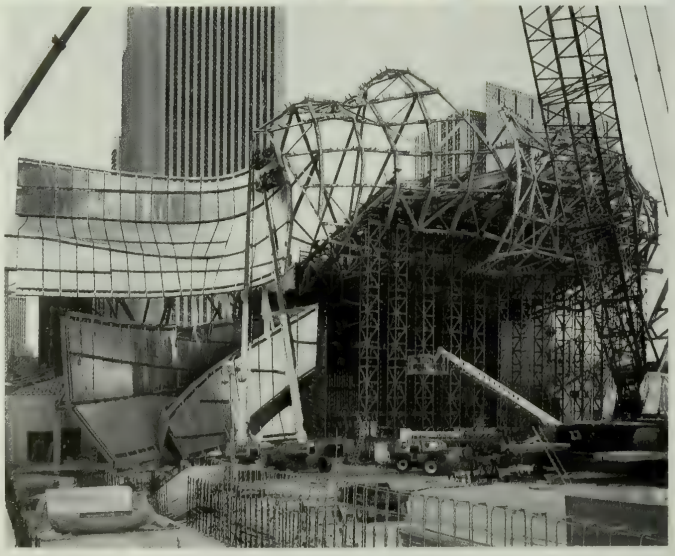
Next up: the Kapoor sculpture, which will measure 60 feet long by 30 feet high and sit on a raised plaza above the skating rink. The sculpture will have a convex, mirror-finish surface that will provide visitors with playfully distorted views of themselves, the park, and the city's skyline (I would not want to be the guy in charge of wiping fingerprints off this thing).

Then Uhlir led us to the site of Gustafson's garden, where, in addition to the broad-shouldered hedges, smaller linear groups of hedges will evoke the freight cars that once lined up along this stretch of the lakefront. Designed in association with Dutch garden designer Piet Oudolf and Los Angeles theatrical lighting designer Robert Israel,

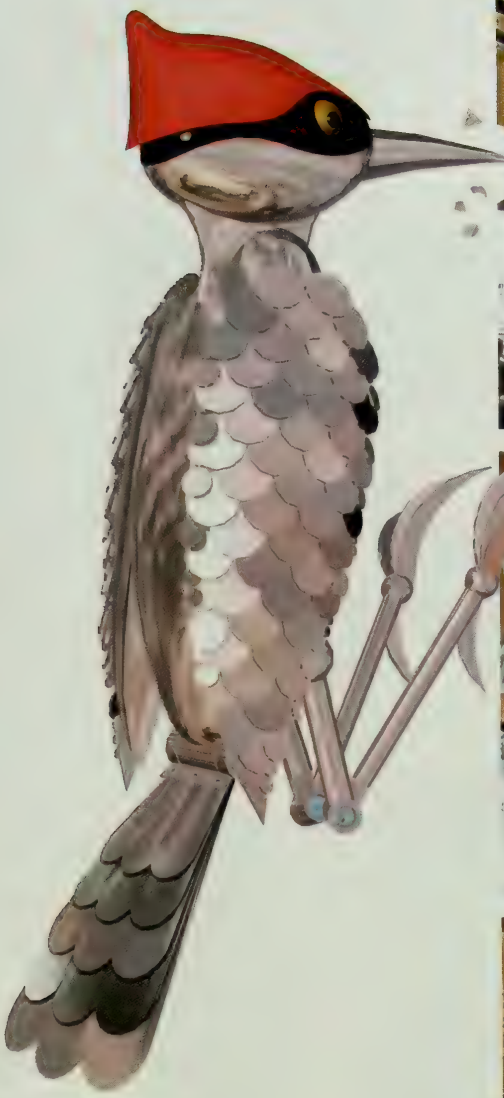








A view from afar of the park under construction (top); rendering of the Gustafson Garden (middle left); the Plensa fountain, under construction (middle right); the Gehry band shell, under construction (bottom).









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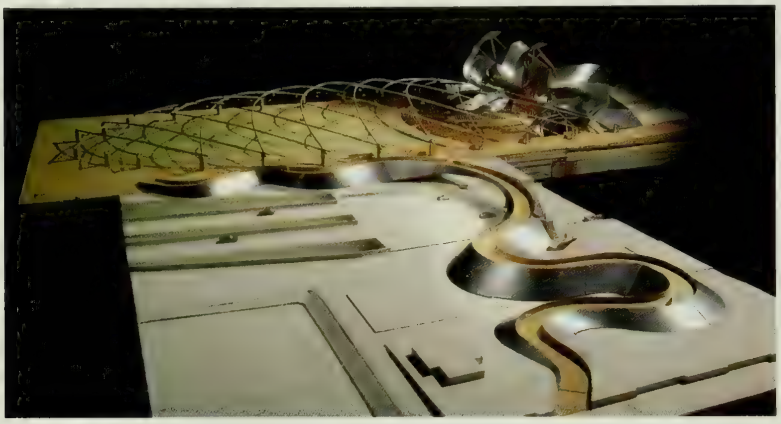
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the project is conceived as a roof garden for the subterranean parking garage. The hedges on its north and west flanks will shelter its delicate inner zones from the crowds attending Gehry's music pavilion. The garden's interior will be split into two distinct planting areas—so-called "light and dark plates"—divided by a wooden walkway that will cut through the site, linking Gehry's bridge with Piano's Art Institute addition.

Finally came the pièce de résistance: Gehry's pavilion, which is topped by the architect's trademark stainless-steel curlicues and will be the new summer home of the Grant Park Symphony Orchestra.

The pavilion comes complete with an outdoor seating area for 11,000 spectators. This area is covered by a strikingly monumental, trellislike web of steel pipes that create a domelike outdoor room. Hanging from the trellis, which measures two-football-fields long by one-football-field wide, is an advanced sound system that eliminates the visual cliché of an open field with a bunch of speaker poles.



Gehry's pedestrian bridge will not only be ornamental, but it will shield street noise.

Alongside the trellis is the Gehry-designed bridge, a snaking span that crosses a busy park road and links the music pavilion to the lakefront.

All this took more than 2 hours, and we hadn't even seen two other parts of the park. One is the rebuilt Neoclassical Peristyle, a project carried out by OWP&P Architects of Chicago, which forms a visual punctuation mark for the park's northwest corner—the Beaux-Arts equivalent of the contemporary fountain in the park's southwest corner. The other is Thomas Beeby's Harris Music and Dance Theater, a supporting actor to Gehry's leading man, with a modest, above-ground entry hall leading to an underground theater that shares backstage facilities with Gehry's pavilion.

It's impossible to build anything as ambitious as Millennium Park without annoying someone, particularly those who would prefer a more contemporary overall plan. But Uhlir defends the project, saying there's nothing wrong with following the Parisian model of follies in a Beaux-Arts framework, especially because many of the park's contemporary elements tweak the Beaux-Arts tradition. "A park should be fun," he says. "It should entertain."

Come July, we'll have a better idea whether Chicago's latest exercise in making no small plans deserves its gusts of adulation. ■



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Okay, architects, lighten up—but don't lose your ideals in the process

Critique

By Robert Campbell, FAIA

As a onetime English major, I like to think about architecture with the help of a yin-yang pair of terms I learned from Northrup Frye, who was one of the great literary critics of the 20th century.

Frye said that a work of literature can have two opposite qualities: It can be playful or it can be ethical.

It can be a kind of inventive game, playing with words, thoughts, and sounds in such a way as to move or delight us. Or it can embody serious lessons about the world and how we should live. Great literature, Frye believed, does both.

You can apply the same terms to architecture. Architecture, too, isn't at its best unless it's both playful and ethical.

Too often we choose only one of those qualities, then sneer at the people who choose the other one.

Ethical architects and critics, who are serious about the social purpose of architecture, may look with contempt on playful architects, who seem interested only in formal inventions that shock or surprise us, or in coming up with fresh fashions as rapidly as clothing designers.

Letting out the hot air

Playful architects, by contrast, think the ethical ones are pompous, dreary, and self-deluding. They believe architecture is merely play, irony, and invention, a visual game in a history of visual games—that it's "art," as they prefer to put it. Think of the later works and sayings of Philip Johnson.

We swing back and forth every few decades between the two poles. The late Victorian age was a period of playfulness, with its thickly layered ornamental flourishes, its battle of styles, its cultural references. Later, in the modern era, the Victorian period came to be seen as a time of overindulgence. A reaction set in, in favor of more serious, more idealistic, more political, more "honest" architecture—sometimes a little joyless, with its lack of ornament and its tilt toward socialism and "social housing."

Then, in the 1970s and '80s, came another turnaround. The Modern movement was superseded by the playful Postmodern era. Pomos valued the playful above all else, especially if it involved wit, irony, and cleverness. Still more recently, architects like Frank Gehry, with such works as his Experience Music Project (EMP) in Seattle, have created architecture that is little more than playful sculpture. The EMP, or some of the work of Zaha Hadid, is an architecture almost purely of formal invention, with no particular nod toward the ethical. (The EMP is untypical of Gehry, who usually balances the playful and ethical pretty well.)

Today, I think we're cycling back toward the ethical pole. People are getting tired of playful conceits, such as some of the idiotic recent proposals for the World Trade Center redevelopment. We're again asking architecture to help make a better world. But as we welcome the return of the ethical, we shouldn't lose sight of the playful. Architecture, whatever else it is, is always also about the joy of inventing form.



Frank Lloyd Wright's Taliesin West combines both the playful and the ethical in its design.

Writer Mary Catherine Bateson gets it right when she talks about food. "Human beings do not eat nutrients," she notes. "They eat food. Food with symbolic meanings, flavors, colors, and smells. Food in the form of traditional dishes, that fit the days of feast and fast and speak of the relationships of husband and wife, parent and child." Symbolic meanings, colors, and smells are the playful side of food. But the food should be ethical, too. It should be nourishing and not too fattening, and it shouldn't be grown or served by exploited labor.

Frank Lloyd Wright said, "The purpose of the universe is play. The artists know that, and they know that play and art creation are different names for the same thing." But Wright was just as strong in his belief that architecture is a shaper and embodiment of ethical human values.

Taking a stand

Like a lot of people, I think it's urgent that architecture address ethical issues today. We can do it in at least four ways.

Architecture can husband the earth's resources, instead of ravaging them. Anyone who reads the papers and doesn't live by the propaganda of petroleum companies knows that we are very near—if we haven't already passed—the point

Contributing editor Robert Campbell, FAIA, is the Pulitzer Prize–winning architecture critic of The Boston Globe.

at which the earth can no longer replenish the resources we draw from it. Buildings that drink deep of the earth's resources are unethical. So are buildings that pollute. New buildings can be designed to save materials and energy. Old ones can be preserved and recycled. But here, as always, the playful and the ethical are inextricably mixed. That deeply layered facade, which shades the interior from the sun and reduces the energy load, is a more richly articulated, more playful surface that the flat skin of the air-conditioned box.

And, of course, architecture is about more than individual buildings. It is also about where we put them, about the settlement patterns by which human beings spread over the earth. An ethical architecture saves resources by clustering buildings close together and mixing many uses in one place, thus reducing the need to construct endless roads for the resource-consumptive, pollution-producing automobile.

Architecture can bring us together as a community, instead of dispersing us into private enclaves. Ethical architecture introduces us to one another. Richard Sennett defines the city as "the place where we learn to know one another." When we build gated suburban communities, each one occupied by people of similar age, ethnicity, and income, we create an architecture of isolation. Democracy can't thrive in a world in which we don't know our neighbors and can't empathize with their problems. And democracy, surely, is an ethical value. We all share the right and need to withdraw, at times, from diverse community experience into private sequestered worlds. But there must also be a public world, where we meet to enrich one another's experience face to face.

Architecture can promote difference, instead of homogeneity. All over the world today, the same Western-inspired architecture is being built. Soon almost every developed part of the world will look much the same; there will be little reason to travel. But diversity in itself is an ethical value. A differentiated world is better than a homogeneous one. As with flora and fauna, the more species, the richer the creation. Architecture can be ethical by preserving meaning—which is difference—in a world that is becoming a gray soup of homogeneity. We can design buildings that respond to local climate, materials, building skills, and traditions, and to cultural tastes and conventions. The Aga Khan program, which gives prizes for appropriate design in the Islamic world (but not for sentimental imitation of some image of the past), is a model for this approach.

Architecture can promote public health, instead of enabling us to get fat and lazy. Changes in building codes can encourage the use of stairs instead of elevators, mandate daylight and air in the workplace, and reduce pollution. Compact settlement patterns—villages, towns, cities, as opposed to sprawl—not only reduce the strain on resources, but also encourage walking and biking and give everyone access to the world of nature.

Those are some ethical moves we can make as practicing architects. As citizens, we can do more. We can use our professional skills to lobby for better environmental laws and international agreements. We can work to improve codes and practices.

But ethical and playful are a both/and, not an either/or. It's dumb to get pompous about being ethical. Nobody should forget—as some of the Moderns did—that architecture is also a sensual game we play for the sheer joy of it. ■

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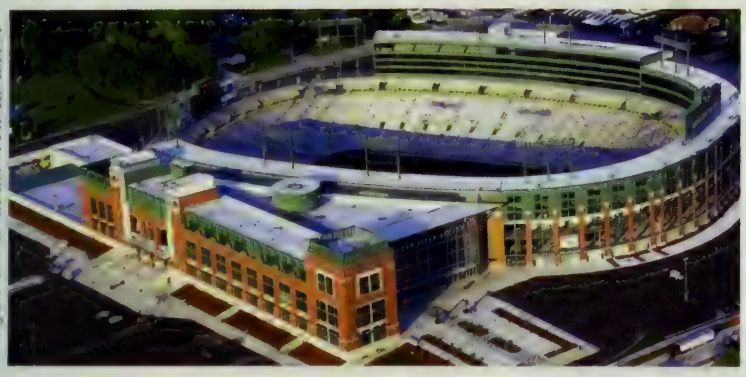
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Theory and design in the machine age, as well before and after it

Books

Reyner Banham: Historian of the Immediate Future, *by Nigel Whiteley. Cambridge, Mass.: MIT Press, 2003, 514 pages, $40.*



If there was ever an academic book that wanted to be a screenplay, this is it. An account of Reyner Banham's perpetually interesting associates and writings seems to demand a more dynamic format than any standard printed book can provide. Nevertheless, Nigel Whitely does an excellent job of presenting the many complex layers of Banham's achievements as a historian and critic, which have had a profound effect on contemporary design culture.

Born in England in 1922 and trained as a mechanical engineer, Banham worked in 1940 as an engine fitter in the Bristol Aeroplane Factory before deciding factory life was not for him. In the 1950s, he emerged as a design critic in two seemingly disparate worlds. One was the scholarly art-historical world of the Courtauld Institute in London, where his thesis with Nicolas Pevsner, later published as *Theory and Design in the First Machine Age* (1960), was one of the first books to subject Modernist founding mythology to detailed study. What is less well known is how Banham's early rethinking of the beginnings of Modern architecture overlapped with his influential role in the Independent Group (IG), a loose organization of artists and architects sponsored by the London-based Institute of Contemporary Art. His influence on the proto-Pop and Conceptual art preoccupations of the IG are examined here through his and other IG members' writings and exhibitions. During this period he became close to other IG members Alison and Peter Smithson, who were also the leaders of the English wing of Team Ten, and to James Stirling. All of them together led the way toward what Banham dubbed "The New Brutalism" in 1955, a movement that sought to expose the basic elements of building for what they were, without regard to canonical ideas of "beauty."

His close engagement with contemporary design directions continued with his advocacy of the 1960s futurism of the Archigram group and of what eventually developed into high-tech architecture. Even before his emigration to the U.S. to teach at SUNY-Buffalo in 1976, he had written the seminal *Los Angeles: The Architecture of Four Ecologies* (1971). This book focused long-overdue attention on the several layers of Los Angeles's vital design culture at a time when it was still considered a dystopian suburban wasteland by most East Coast and European designers.

By his own description, Banham was most interested in "what happens along the shifting frontier between technology and art." Whiteley takes issue with this, instead suggesting that Banham's real interest was in the interrelationships of "humans, technology, and environment." This theme provides the basis of his consideration of Banham's prodigious and influential writings. The context and implications of each of Banham's later and still valuable books, including *The Architecture of the Well-Tempered Environment* (1969); *Megastructure: Urban Futures of the Recent Past* (1976); *Scenes in America Deserta* (1982); and *A Concrete Atlantis: U.S. Industrial Building and European Modern Architecture* (1986), are carefully discussed in this book's 410 smoothly written pages. Given this incredible load of thoughtful detail, it is a bit frustrating to find that the book does not include a full bibliography of Banham's writings, only an addendum to the "almost full" bibliography published in *A Critic Writes: Essays by Reyner Banham* (Mary Banham, et al., 1996). One can also quibble about the lack of archival references in the notes, although it is clear that the author knows the material extremely well. *Reyner Banham: Historian of the Immediate Future* is a useful first place to look for anyone interested in the design cultures of the late 20th century. *Eric Mumford*



Ideas That Shaped Buildings, *Fil Hearn. Cambridge, Mass.: MIT Press, 2003, 368 pages, $19 (paper).*

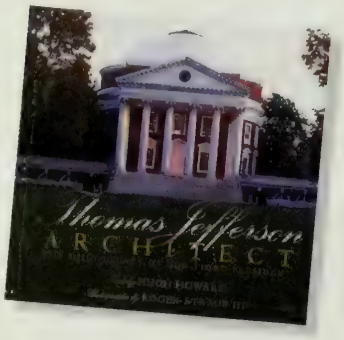
Fil Hearn's engaging tour of the ideas that have shaped architecture over the past two centuries is not a straight, chronological stroll. Instead, the first part is a sprint through architecture's intellectual highlights, and it offers a great overview—for new students of architecture as well as for those who have not picked up a theory book since graduation. There are no surprises here. Hearn shows how theorists have used history to reinvent architecture through the ages, up through the Postmodernists, and he provides a lively demonstration of how certain architectural ideas led to others. For example, Violet-Le-Duc's passion for history led to a new concern for preservation, while the 18th-century Classicist Laugier's striving for clarity of structure and order led to Modernism.

After this spirited jaunt, Hearn applies the brakes and throws his book into reverse. He spends nearly 100 pages talking about the development of the Classical orders and their influence on architecture for more than 1,800 years. I suspect that for most readers this stretch will be a struggle, and they will bail out. You may want to skip ahead to what happens after 1800, as Hearn discusses the rise of rational design and planning methods, the role of structure and

expression, modern concepts of space, and the role of symbolism. Here the writing is once again concise, and Hearn links ideas and developments up through the late 20th century. At the end of his book, he includes a helpful timeline of treatises, starting with Vitruvius in 30 B.C., that have shaped architecture. The list ends with Malcolm McCullough's *Abstracting Craft: The Practiced Digital Hand* of 1996. Hearn is a good tour guide. *Michael J. Crosbie*

Thomas Jefferson, Architect: The Built Legacy of Our Third President, by *Hugh Howard. New York: Rizzoli 2003, 204 pages, $40.*

Thomas Jefferson is perhaps America's most important architect. Monticello has graced the back of the nickel for many years, but although Jefferson's home is an



important house, his primary architectural contributions lie elsewhere. Beginning in the mid-1780s with the Virginia State Capitol in Richmond, continuing with his involvement from 1790 to 1809 with the plan and public buildings of Washington, D.C., and culminating with the University of Virginia from 1814 to 1826, Jefferson made Classicism the architectural language of the young nation.

His role is so crucial that it comes as a surprise to realize that for most of the 19th century and well into the second decade of the 20th, Jefferson was ignored as an architect. Fiske Kimball's *Thomas Jefferson, Architect* (1916), after which Hugh Howard's book is named, made the case for his importance and still remains the classic study of Jefferson as an architect. Later scholars have added information and reinterpreted aspects of Jefferson's designs, but as Howard acknowledges, Kimball's study was the beginning. The books are different: Kimball's was a scholar's examination of the evidence—primarily architectural drawings and documents—while Howard's book is, as he admits, aimed at a broad audience. He does include some architectural drawings and some vintage photographs, but most of the illustrations are color photographs by Roger Straus III. The photographs are in general very good, though there are a few lighting problems, including an odd tendency to photograph some buildings in shadow.

Howard covers Jefferson's buildings, along with some personal anecdotes about the third president, his family, and builders. In addition to a canonical list of Jefferson's work, Howard includes a group of Charlottesville-area houses in which Jefferson played a role. New photographs and treatment of the ongoing restoration at Poplar Forest, Jefferson's retreat near Lynchburg, are especially welcome. Howard has done his homework and synthesized most of the printed sources and includes numerous quotes. There are no footnotes, but a bibliography is provided. He also traces some aspects of Jefferson's legacy; many who worked for him at Monticello and at the University of Virginia would later design and build in the piedmont region. Howard also examines some 20th-century successors, such as Milton Grigg III and Fiske Kimball.

The major problem with Howard's text is its low-brow tone and word choice: such as, "Hey, let's get classical"; "Palladio's brief bio runs this way"; "To get what you

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want, you gotta be there"; and, "Nevertheless, the description is as apropos as an olive in a martini." Maybe this is what the broad audience requires, but it doesn't seem appropriate for Jefferson's architecture. Yet Howard clearly understands the importance of Jefferson's architectural revolution; he makes the point that in *Notes on the State of Virginia* (1781–82), Jefferson bemoaned the low state of architecture and that "a workman could scarcely be found here capable of drawing an order." By the time of his death on July 4, 1826, he had trained a talented group and set American architecture on a new course. The above quibbles aside, this is a good introduction to Jefferson and the beginning of America's long love affair with Classicism. *Richard Guy Wilson*

Good Deeds, Good Design: Community Service Through Architecture, *edited by Bryan Bell. New York: Princeton Architectural Press, 2004, 240 pages, $30.*

"The substitution of critique for advocacy leaves out too much of the architectural endeavor … Humanism cannot replace humanitarianism," writes Princeton's Robert Gutman in the introduction to this collection of essays describing community-based design-build programs, including DesignCorps, founded by the book's editor, Bryan Bell.

We learn that the best projects grow out of collaborative efforts among architects, communities, nonprofits, and end users. A cautionary example: For a house in an Indian village, a well-intentioned designer built a solid granite mortar into the kitchen floor for grinding spices, only to learn that one of the owner's most prized possessions was a food processor. As the late Samuel Mockbee writes, "What is necessary is a willingness to seek solutions to the community in its own context and not from outside." Another lesson: Too much emphasis is put on physical planning and design and not enough on creating social and economic opportunities. Nearly all the authors stress the ability of participatory design to catalyze change.

Many of the essays are disarmingly honest. The authors claim progress, rather than success, and



are frank about their failures. Bell explains some of DesignCorps' mistakes and how it has learned from them. Kristine Renner-Wade, a former DesignCorps worker, admits her efforts to provide alternatives to the typical suburban home often weren't appreciated and says unique designs catering to individual needs "were often looked upon with suspicion."

A broader message of these essays, writes Jason Pearson of the design-based nonprofit Greenblue, is that community-based design-build offers opportunities to broaden architectural practice to include community organizing and advocacy, tasks that can range from volunteer fund-raising to strategic leadership.

A 1996 report by the Carnegie Foundation found that 22 percent of architecture students chose architecture to "help improve communities." This book is a good starting point for them and all designers interested in combining good design with good deeds. *Andrea Oppenheimer Dean*

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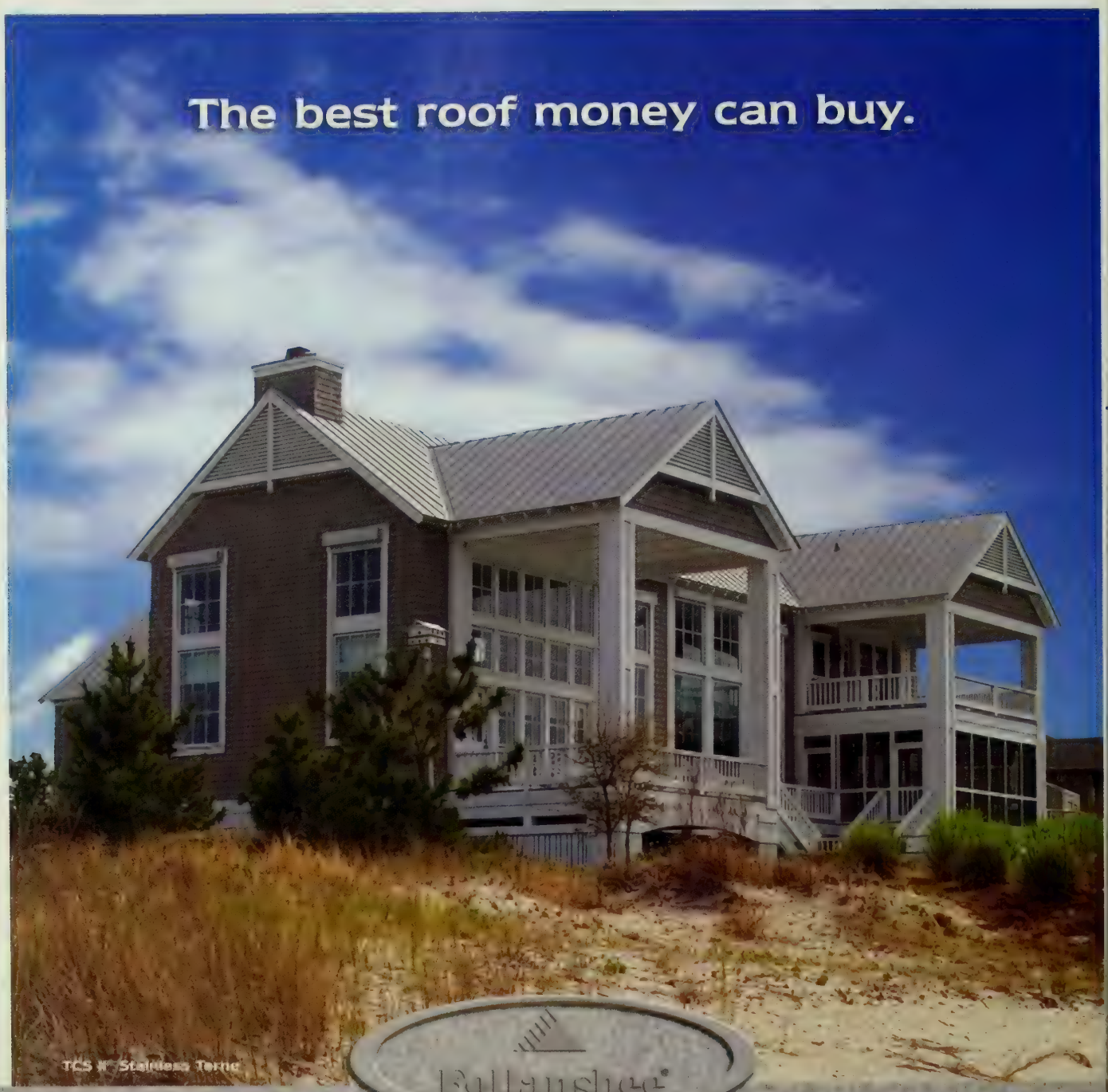
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At the Art Institute, one Chicago that might have been and one that could be

Exhibitions

By Deborah Snoonian, P.E.

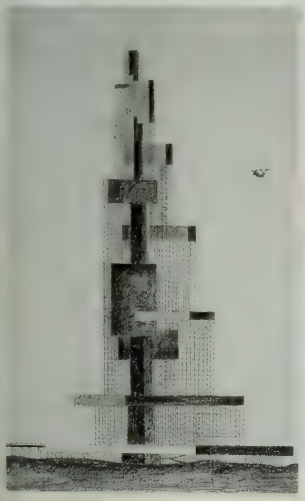
Unbuilt Chicago. *Curated by Dan Wheeler. At The Art Institute of Chicago, through January 16, 2005.*

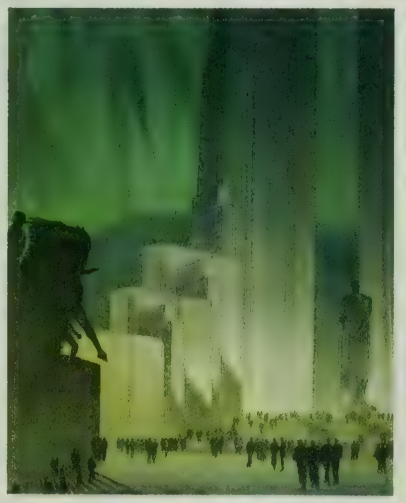
Chicago and buildings—perhaps no other American city's identity is so entwined with the profession of architecture. On April 4, the Art Institute unveiled a hypothetical skyline for the Windy City—one recorded in pixels and on paper rather than in concrete, glass, or steel. Chicago architect Dan Wheeler, of the firm Wheeler Kearns, drew from the Institute's collection of more than 130,000 architectural objects to showcase some 90 drawings, renderings, and models of never-built projects dating from 1880 to the present.

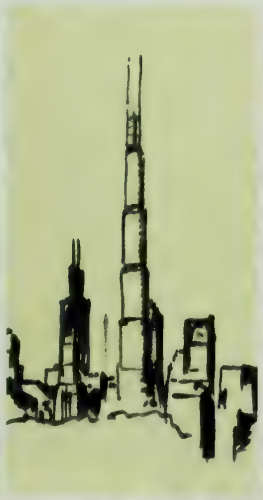
The show reveals Chicago's long history as fertile ground for design ingenuity at all scales. The theoretical work *Expanding Skyscraper* by Reginald Malcomson (1961), a tower to which cantilevered floor plates could be added over time, is an intriguing attempt to weigh the fluctuating demands of the city against the immutable nature of completed buildings. This and other sky-high aspirations by SOM; Voorhees, Gmelin, and Walker; and others rub shoulders with low-rise imaginings like Henry Harringer's Ziegfield Fashion Theater from 1930, whose zoomy curves typify Art Deco exuberance.

Wheeler has assembled a who's-who lineup of the city's practitioners of yesteryear (Mies van der Rohe, Daniel Burnham, Louis Sullivan) and today's bellwethers (éminence grise Helmut Jahn [see feature, page 96], Doug Garofalo, Jeanne Gang) in a show that celebrates the power of ideas and the pleasure of imagination. ■

Images from *Unbuilt Chicago* (clockwise, from top left): Reginald Malcomson, *Expanding Skyscraper*, 1961; Voorhees, Gmelin, and Walker, Chicago War Memorial, ca. 1931; SOM, 7 South Dearborn Street, 1999; Studio Gang/O'Donnell, Chicago Visitor Information Center, 2001; Henry Harringer, Ziegfield Fashion Theater for the Century of Progress Exposition, 1930; Burnham Brothers with Nimmons, Carr & Wright, Chicago Yacht Club, 1928–30.

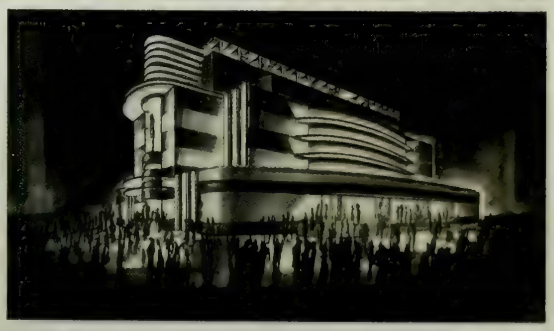














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Looking forward: Ten architects imagine new ideas for Chicago's future

Exhibitions

By Clifford A. Pearson

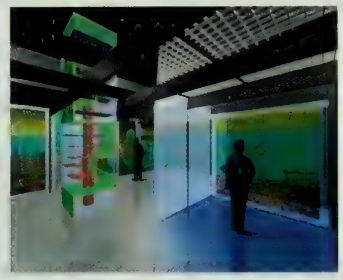
Chicago Architecture: 10 Visions. *Cocurated by Stanley Tigerman. At The Art Institute of Chicago, November 26, 2004–January 30, 2005.*

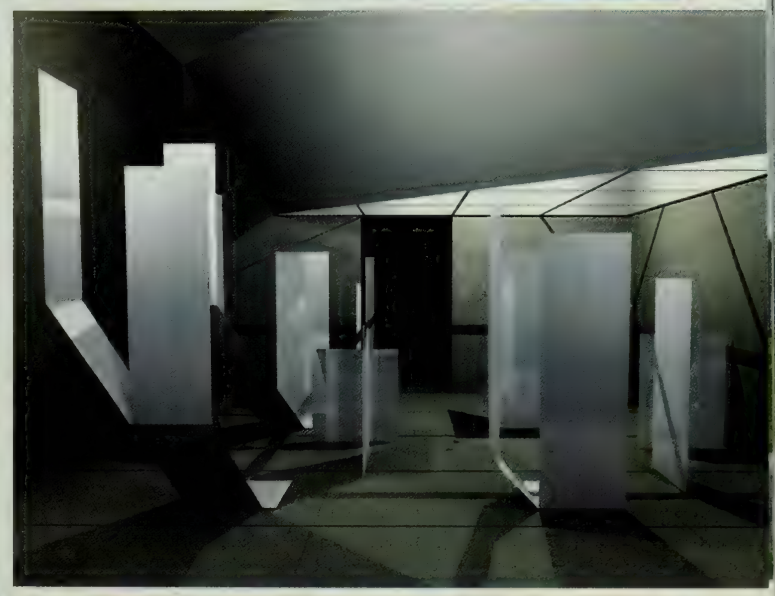
With the days of the Miesian party line long gone, Chicago architects now speak in a multitude of voices. Rather than a cacophony, the resulting sound comes across as a vibrant, if somewhat irregular, buzz, enriched by a range of accents and timbres. That's the sense one gets from sketches by 10 Chicago architects of their installations at a show set to open at the Art Institute in November. "There's no overarching vision that the achitects agree upon," says architect Stanley Tigerman, the cocurator of the exhibition (with a jury of three design professionals). "And that's the point."

All of the show's 10 participants have designed installations for identical 21-foot-square rooms bisected diagonally by a drop in ceiling height from 15 feet to 8 feet. The jury, composed of Tigerman; architect Henry Cobb; Martha Thorne, associate curator at the Art Institute; and John Zukowsky, curator of architecture at the museum, selected the participants from 20 architects invited to submit ideas.

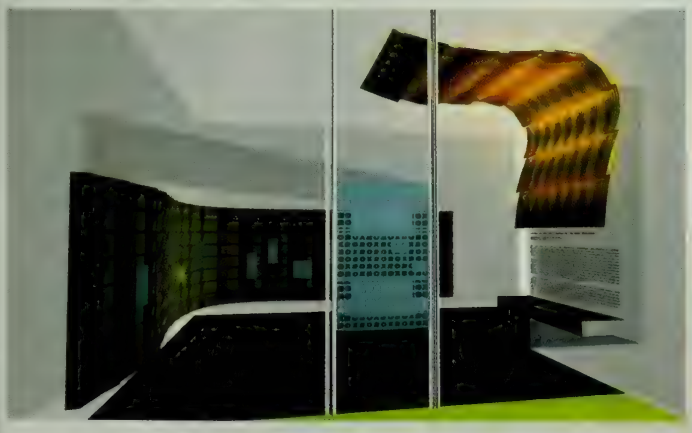
The architects selected range from provocateurs like Tigerman himself to younger practitioners such as Jeanne Gang and Doug Garofalo; from established figures, including Joe Valerio and Ralph Johnson, to less-well-known designers such as Katerina Ruedi and Xavier Vendrell. Other participants are Margaret McCurry, Eva Maddox, and Ron Krueck. The designs also represent a range of approaches, from Rubio's focus on process to McCurry's look at a particular building type (housing); from Krueck's use of abstraction to Johnson's vision of Lake Michigan. ■







Picturing things to come for Chicago (clockwise, from top left): Margaret McCurry, Ralph Johnson, Joe Valerio, Xavier Vendrell, and Doug Garofalo.







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Snapshot



By Nick Olsen

Repackaging the office box in the Chicago suburbs

Rising above the Edens Expressway on 3 acres in suburban Northbrook, Illinois, the brick-clad headquarters of Lipson Alport Glass Associates, a leading package-design firm, might give the impression of a typical office box. On closer inspection, one finds its looks are deceiving. A second box, composed of glass, sits directly below the brick structure, but is offset from it by 50 feet. The result evokes the meeting of two tectonic plates.



The dramatic shift in the building often elicits a double-take reaction from passing motorists and has prompted its architect, Joe Valerio of Chicago's Valerio Dewalt Train Associates, to dub the structure a "rear-view-mirror building."

Yet the Lipson Alport Glass headquarters is hardly reducible to a single visual effect. Designed as an addition to a drab 18,000-square-





A sloping glass box affords sunlit studio space (above). Lobby staircases contrast with the horizontal displacement of the two volumes (right).

foot office building, the new structure doubles the floor space and accommodates a complex program. The original building was gutted to its steel frame and joined with the glass-and-steel addition to enclose a U-shaped plan and create a central courtyard. The airy ground floor provides interactive studio space for designers as well as administrative offices, while focus groups and research facilities occupy the quiet, isolated brick upper level. Open web trusses support a dramatic double-height lobby, with a gently sloping floor (4 to 5 degrees) and an oversize steel staircase that mitigate the horizontality of the 50-foot cantilever.

The result is a bright, dynamic, and functional play on the standard office building. As a packaging-design business, Lipson Alport Glass creates striking visual identity programs for corporate giants like Coca-Cola and Procter & Gamble. Here, Valerio Dewalt Train reexamines and ultimately subverts traditional office "packaging" to capture the vitality and ephemerality of brand design. ■



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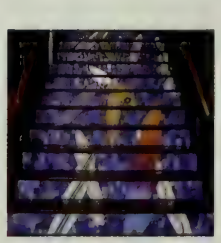
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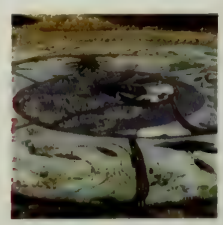
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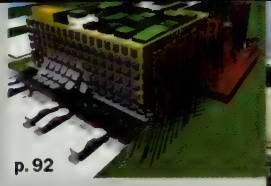
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Strawn and Sierralta's Ford Calumet Environmental Center entry (above); SOM's Trump Tower (above right); Helmut Jahn's Deutsche Post (right).

Chicago moves on

By Clifford A. Pearson

Move over, Mies. The city is producing a new group of talented architects and awarding commissions to some of the world's stars.

The iconic views of Modern landmarks still impress us: Mies's 860-880 Lake Shore Drive standing proud at the water's edge (below); SOM's Hancock Tower rising above the crowded streets; and Sullivan's Carson Pirie Scott store bringing the sidewalk to life. But Chicago is busy moving forward, laying the foundation of its future legacy. A new generation of architects at the start of their careers is already making its mark in competitions around the country. Firms such as Strawn and Sierralta and 3D Design Studio are set to contribute to the city's rich tradition of building well. Established architects such as Helmut Jahn and SOM are back on track, too, after losing their way during the days of Postmodernism. And star architects from around the globe are flocking to work in the Windy City.



Young firms

bring a breath of fresh air to the Windy City





Darryl Crosby and Melinda Palmore of 3D Design Studio (above). Projects include the uniquely configured and variously clad Intergenerational Learning Center in Chicago (top) and a winning prototype for the Universal and Affordable House Competition (left).

By John E. Czarnecki, Assoc. AIA

It is easy to typecast Chicago as the Midwestern City of Big Shoulders that had (past tense) a major influence on the planning of the modern metropolis and the development of tall buildings. In the architecture profession, Chicago is known for large, prominent firms with storied histories, including Skidmore, Owings & Merrill and Holabird & Root, which helped to shape it. But who are emerging as the new architectural talents for an evolving Chicago? RECORD found a handful of extraordinary young Chicago designers who are forging ahead in directions that a young architect may not have thought possible even a generation ago.

Starting a new architectural practice in Chicago can be daunting, considering the architectural history of the city and the pedigree of some of its most well-established firms. But for Darryl Crosby and Melinda Palmore—Chicago natives and friends since meeting in architecture school in the mid-1980s—starting their own firm as African-Americans in a predominantly white profession was an even greater challenge. They began 3D Design Studio in 1997 and now have two employees, a few competition wins, and a growing list of high-profile clients. "It's difficult to move up in the structure if you're not white," Palmore says. "But we had the requisite talent and courage to start our own firm."

Palmore and Crosby met at the University of Illinois at Chicago (UIC) School of Architecture, and both gained valuable experience in the Chicago office of Skidmore, Owings & Merrill, where Palmore worked on the design for London's Canary Wharf. Crosby got his start working for his professor, Stanley Tigerman, FAIA, at Tigerman McCurry Architects while still in school. "Darryl's work is clear, clean, direct, and still innovative," says Tigerman.

Crosby and Palmore began their own firm with a commission for administrative office renovations and a new outdoor terrace for Chicago's Field Museum of Natural History. A number of competition entries also fueled their creative spark before the firm won the Universal and Affordable House

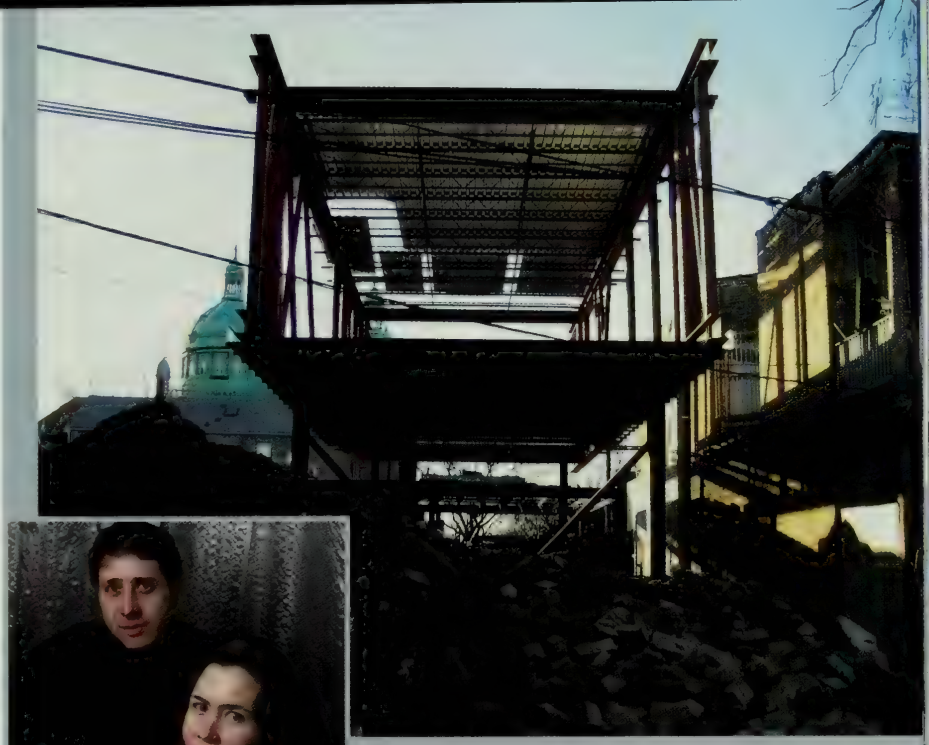
John E. Czarnecki, Assoc. AIA, is an acquisitions editor of architecture books at John Wiley & Sons and a former associate editor of ARCHITECTURAL RECORD.

Competition, sponsored by the City of Chicago in 2002, for universally accessible and adaptable housing. Their design for three prototypes—all based on 12-by-36-foot modules—clearly distinguish living, circulation, and service spaces both in plan and through distinctive colors on both the interior and exterior. Now the team is designing a new lounge that will open this summer in the renovated Goodman Theater, and the $9 million Intergenerational Learning Center in Chicago, a colorful space clad in metal panels, plywood, aluminum, and spandrel glass, providing housing, education, and day care for children and seniors alike.

Neither Sarah Dunn nor Martin Felsen is originally from Chicago, but as architects, they were attracted to the city because "it seemed like a place where you could build," says Dunn. Dunn met Felsen while both were earning master's degrees at Columbia University in New York in the early 1990s. She went on to three years at Rem Koolhaas's Office for Metropolitan Architecture in Rotterdam, where she was project architect for the IIT McCormick Tribune Campus Center in Chicago. Felsen, meanwhile, came to Chicago to teach at the IIT School of Architecture, while Dunn joined him in Chicago and, since 1999, has taught at UIC. Together, they have had their own practice, UrbanLab, in a home-office storefront in the gentrified Pilsen neighborhood.

UrbanLab's work has been in a number of exhibitions, but its first major showing was the design of a prototypical bus shelter for the Museum of Contemporary Art's *Material Evidence: Chicago Architecture at 2000* show in 1999. The shelter had a GPS/GIS system embedded in the structure that would inform transit passengers of the geographical position and arrival time of buses. The firm won the 2003 Emerging Visions Competition, a portfolio competition sponsored by the Chicago Architectural Club, AIA Chicago, and Knoll, and its first significant built project is a design-build venture: a new home-office for themselves. Located a few blocks south of their current storefront, the new home has a front office loft clad in Cor-Ten steel and a rear residential loft clad in aluminum. Both are built next to and above a grassy mound composed of the demolition debris from the run-down grocery store that was previously on the site. "Instead of wrecking the building and removing the debris to a suburban landfill, we choose to recycle the demo on-site and mold it into a mound," says Felsen. "Chicago has a culture where people care about architecture," he adds, although he acknowledges that UrbanLab's start—with theoretical projects, exhibitions, and competition entries—is an anomaly in Chicago, where "the norm is to work for a larger firm and then go on your own with clients that you had worked for."

Last month, UrbanLab was a finalist in a competition to design the Ford Calumet







Martin Felsen and Sarah Dunn of UrbanLab (above). Projects include their own studio/live space, which cantilevers over the demolition debris of a former grocery store (top), and an ecofriendly, highly unorthodox entry for the Ford Calumet Environmental Center (right and below).







Brian Strawn and Karla Sierralta (above). Their entry for the Ford Calumet environmental Center includes recycled car hoods and reclaimed telephone poles (top). Their *Dual Memory* (left and below), which featured victims' faces projected on clear surfaces, was a finalist at the World Trade Center Memorial Competition.



Environmental Center, a new environmental facility for Chicago's far South Side. The firm's design calls for the building itself to work with the ecosystem to actually help clean the polluted industrial site, with a wetland on the roof. Daylight will be integrated throughout the structure, which will include exhibition space, classrooms, and laboratories for environmental education.

A competition winner was to be named in late April, and other finalists included the experienced Carol Ross Barney, FAIA; Jeanne Gang, AIA; a Japanese architecture student; and recent architecture school graduates Brian Strawn and Karla Sierralta. Strawn and Sierralta both graduated from the UIC School of Architecture in May 2003. While dating and beginning their careers with different firms (Strawn with Vinci Hamp Architects and Sierralta with Norsman Architects), together they have had a remarkable first year out of school. They've been named finalists in two high-profile competitions: for the World Trade Center Memorial in New York and the Ford Calumet Environmental Center.

Strawn, who grew up in Alexander, Illinois, and Sierralta, who is originally from Maracaibo, Venezuela, met while at UIC, but they had never worked on a project before deciding to develop an entry for the WTC Memorial Competition. To their surprise, they were selected as one of the eight finalists for their entry, called *Dual Memory*, which called for 2,982 light portals over the footprint of the North Tower and 92 Sugar Maples at the site of the former South Tower (rendering, bottom left). Once named finalists, Strawn and Sierralta refined their scheme on a computer at Strawn's apartment. In their imaginative entry for their next competition—the Environmental Center—Strawn and Sierralta incorporated remnants of Chicago past, including recycled car hoods, perforated train-car panels, and reclaimed telephone poles in the skin of their building design.

In suburban Illinois, Randall Deutsch, AIA, grew up dreaming of being an architect "from day one." At 42, he is still young for architecture, but he is no newcomer to the Chicago scene. Prior to starting his own firm, Deutschwrx, in 2000, he had already worked as an associate with Lohan Associates and then with Jordan Mozer and Associates, both in Chicago. As a senior designer at Lucien Lagrange Architects, also in Chicago, he worked on more than 40 projects, including the new 840 N. Lake Shore Drive luxury tower, and 175 West Jackson, Chicago's fifth-largest office building. For such efforts he was awarded the 1999 AIA Young Architect Award for Chicago.

Since establishing Deutschwrx, based in Winnetka, Deutsch's work has been smaller in scale, but still inventive. It includes commercial, residential, and religious projects. More radical designs include a proposed Pedway (pedestrian walkway) entry pavil-

ion made of glass and steel for downtown Chicago's Brunswick Plaza that fits comfortably within the straight lines of the nearby buildings and complements the curving Miro sculpture standing beside it. Another project is a residential unit in 840 N. Lake Shore Drive inspired by the client's admiration for the Picasso painting called *The Dream*. Based on the painting, the spaces are divided into conscious (public) areas and unconscious (private) ones.

"Starting on your own helps you not only set the project types, but also really allows you to get your hands around a project," Deutsch says.

The demand for sustainability in all aspects of design, from interiors to furnishings, is part of what drove Jill Salisbury to start her company, EL: Environmental Language (www.el-furniture .com), last year. An interior designer by training, Salisbury was interior design manager for Torchia Associates in Chicago and saw a need for furnishings that were manufactured of green or ecologically friendly materials.

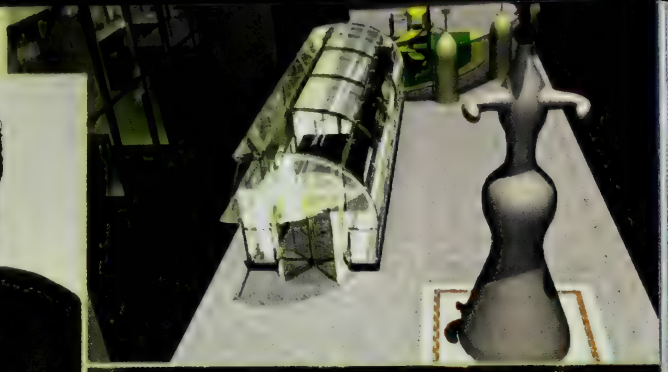
She left the firm in 2001 and, with environmental consultant Paul Clark of Eugene, Oregon, started researching materials and developing conceptual designs for high-end biodegradable home furnishings. Her first line, constructed by two manufacturers in Chicago, debuted last fall.

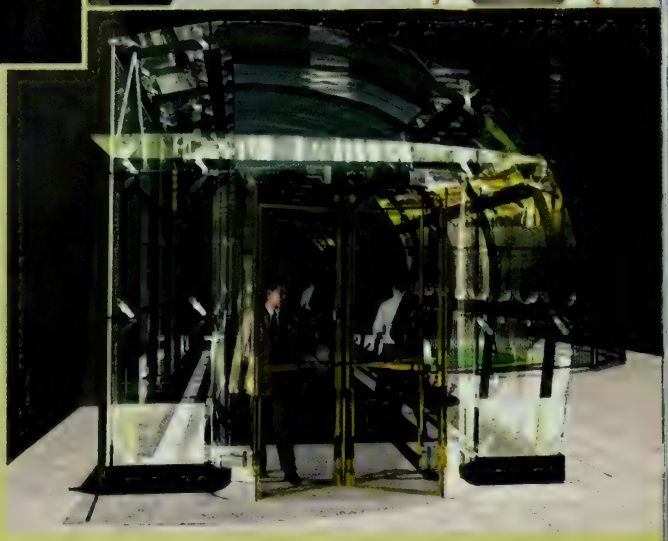
From her home in suburban Barrington, Salisbury designs her furniture line, which has 20 initial pieces, including sofas, chairs, beds, and tables that are made with natural or nontoxic materials and manufactured with nontoxic processes. All of the fabrics, including wool, organic cotton, and hemp, are free of chemicals. Rubber latex is used for cushions, and leathers are chromium-free. Only domestic hardwoods such as walnut or maple from certified sustainable forests are used, rather than wood from clear-cut forests. Bamboo, which is renewable, and palm wood from a coconut tree plantation in Hawaii are both in a variety of pieces. Salisbury seems most excited when describing her use of the meat of the tagua nut from Ecuador, which she employs as an inlay in handles of pieces on her Zen collection. As she says, "It's the size of a plum and looks exactly like ivory."

Environmental Language is focusing on the Chicago area market initially, but Salisbury plans to have a greater presence on the West Coast within a year.

Salisbury and the other young designers making a difference in Chicago are changing the city's built environment by taking the road less traveled. Though, as Strawn and Sierralta showed with their World Trade Center Memorial entry, the impact of their design talents can be far-reaching. Says Deutsch, "It's worthwhile knowing there are all these start-up firms that have taken chances and done some great things. It's very healthy for Chicago." ■







Randall Deutsch (above) proposed a Pedway entry pavilion for Brunswick Plaza in Chicago (top right and right) that features curved glass and steel with a stone base. The steel has an anodized aluminum finish to match surrounding buildings.

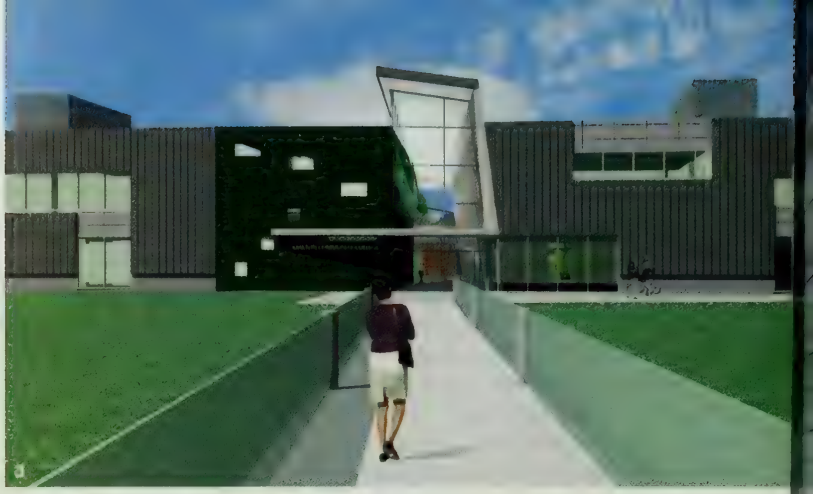


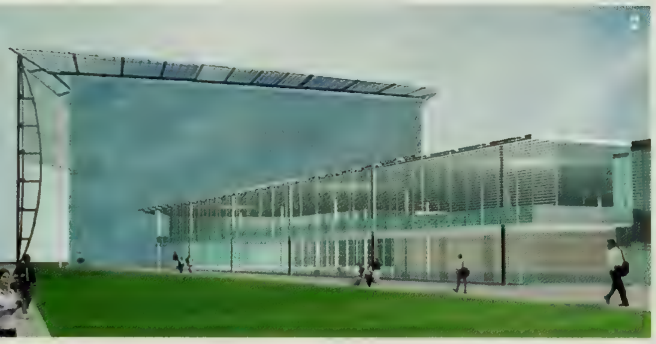




Jill Salisbury (above) founded a company, EL: Environmental Language, that has developed biodegradable home furnishings (right two) made of natural and nontoxic materials.









Upcoming building projects help establish a new design tradition

Firms are busy with designs in and around Chicago that continue to build on the city's legacy of innovative architecture. Many clearly demonstrate the influence of the Chicago Modern School, with its exposed structures and clean forms. Others are completely new and unpredictable, experimenting with novel concepts and geometries. Some will alter the legendary downtown skyline, while others will lend sophisticated design to areas once lacking it. The new Chicago School is still forming, but here's a glimpse of what it will look like. Sam Lubell

1. Project: *156 West Superior*
Location: *Chicago*
Architect: *Miller/Hull*
Program: *Seven-story mixed-use project in the city's River North district. Operable metal-slat screen walls and outdoor decks give the building a unique texture.*
Schedule: *Construction scheduled to begin in September.*

2. Project: *Addition to Shure Headquarters*
Location: *Niles, Illinois*
Architect: *Krueck & Sexton*
Program: *Addition includes testing laboratories, offices, and open space. High-bay, long-span, steel-frame loft construction, clad in glass and steel panels.*
Schedule: *Completion expected at the end of May.*

3. Project: *Ray Harstein Technology Center Addition, Oakton Community College*
Location: *Skokie, Illinois*
Architect: *Ross Barney + Jankowski Architects*
Program: *$12 million, 59,000-square-foot facility will include design studios, computer labs, offices, and meeting spaces. The facade features metal panels and masonry blending with the original structure.*











Schedule: *Completion is scheduled for the end of 2004.*

4. Project: *Hyde Park Arts Center*
Location: *Chicago*
Architect: *Garofalo Architects*
Program: *Adaptive reuse of a two-story masonry structure. The facade will be made of glass and steel and equipped with digital projection screens, scrims, and shades that allow for electronic art.*
Schedule: *Construction set to begin in January 2005.*

5. Project: *Lakefront Supportive Housing*
Location: *Chicago*
Architect: *Murphy/Jahn Architects*
Program: *100-unit supportive-housing development bordering Chicago's once-infamous Cabrini Green housing projects.*
Schedule: *Construction set to begin in January 2005.*

6. Project: *Miglin Properties Hotel*
Location: *Chicago*
Architect: *Valerio Dewalt Train Associates*
Program: *Located at the edge of the city's Modernist core, the 216,000-square-foot, 200-room hotel will be made of huge, seemingly floating masses resting on a balanced structural skeleton.*
Schedule: *Completion set for fall 2005.*

7. Project: *Trump Tower Chicago*
Location: *Chicago*
Architect: *Skidmore, Owings & Merrill*
Program: *Tallest new building in the U.S. since the Sears Tower, the structure, built on the site of the former Chicago Sun-Times building, is designed to reflect its orientation along the river-front, while three setbacks provide connections to surrounding buildings.*
Schedule: *Completion set for late 2007.*

8. Project: *One South Dearborn*
Location: *Chicago*
Architect: *Richard Keating of DeStefano Keating Partners*
Program: *The 40-story office tower, located on the site of the scrapped Seven South Dearborn, will have a massive glass curtain wall articulated with horizontal bands.*
Schedule: *Completion set for late 2005.*

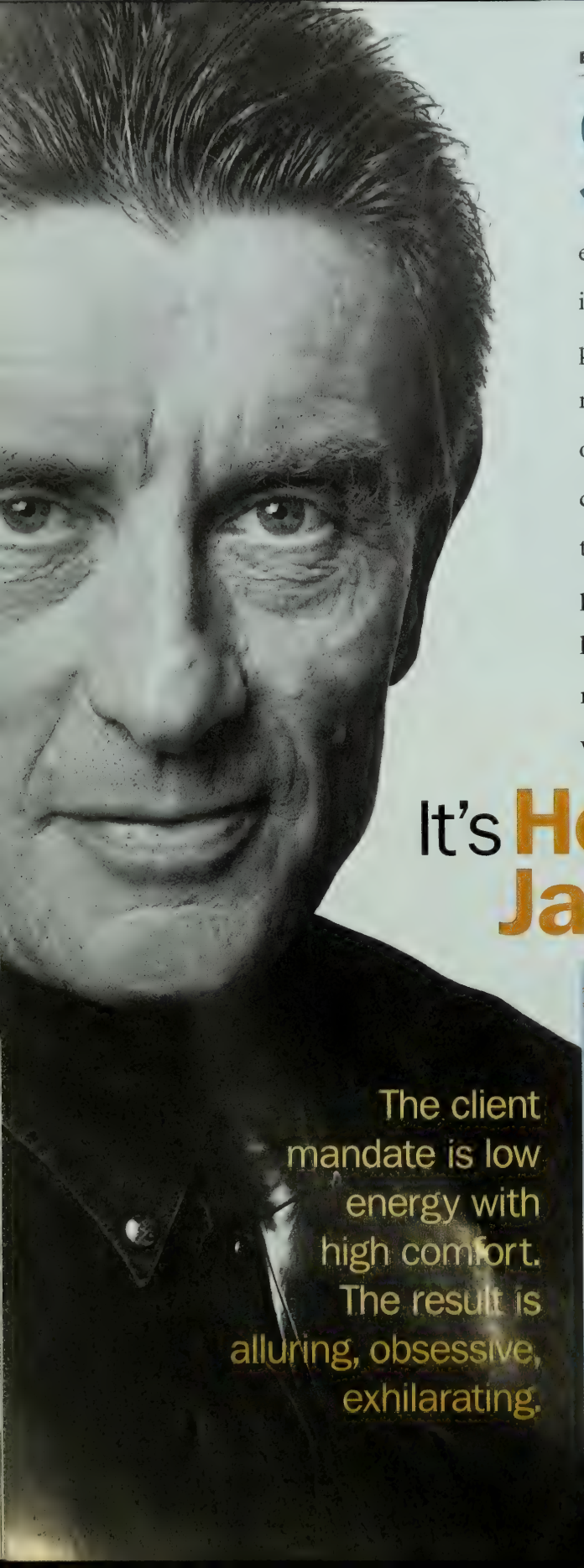
9. Project: *Crystal Street House*
Location: *Chicago*
Architect: *Studio Gang Architects*
Program: *The aggressively Modern-style house is organized around a light court, which is accessible through a glass enclosure.*
Schedule: *Construction set to begin in January 2005.*

IMAGES: COURTESY MILLER HULL (5); FARSHID ASSASSI (6); STUDIO GANG ARCHITECTS (9)

By James S. Russell, AIA

It's Helmut Jahn's Moment

Stand in front of the Deutsche Post Tower where its two airfoil-like curves cross each other, and peer in—especially at dusk. You will see a space of glowing light, crisscrossing struts, glassy gridded planes—all vanishing into an apparently infinite distance. It's alluring. It's spectacular. It's obsessive. It's high-rise existence liberated from cubicles, dropped ceilings, drywall, and sometimes floors. Agoraphobes beware. This is a particularly spectacular product of the relentlessly sketching pen of Helmut Jahn. Today he is not designing buildings; he's creating incredible worlds inside buildings: heady, disorienting,

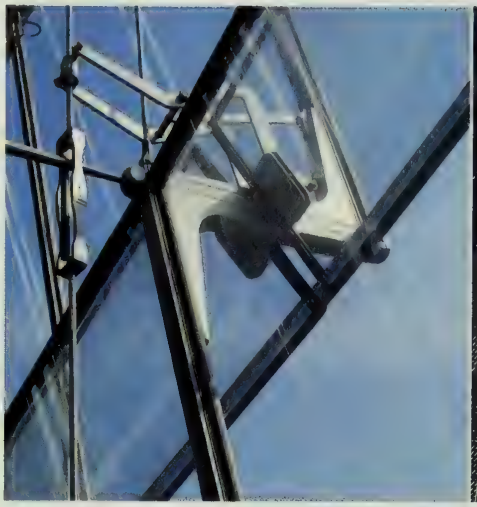


The client mandate is low energy with high comfort. The result is alluring, obsessive, exhilarating.





th the layering of transparent plane on trans-
rent plane, walls, floors, ceilings, partitions,
en window-wall supports lose their materiality.







The Deutsche Post Tower (right) relies on such elegant details as the ventilating, shingled wall section (above far left), which is related to similar details at the Bayer project (above middle two), including a spring-weighted cable facade (above far right).



PHOTOGRAPHY: © ANDREAS KELLER, EXCEPT AS NOTED

exhilarating. When last seen in America, Jahn was restlessly penning spec office towers that were built in his firm's home city of Chicago, as well as in New York, Philadelphia, and Houston. He would drop conical tops or Deco spires on them, and drape them with streamlined curves. He personified the flamboyant and real estate obsessed 1980s, appearing on magazine covers in Al Capone–inspired double-breasted suits.

Both the look and the workload vanished in the commercial-building crash that extended well into the 1990s. While the commissions and the name faded in the states, Murphy/Jahn won large, complex projects in Germany, where Jahn grew up. Through them, the firm quietly transformed its design approach. For the Munich Airport Center and its Kempinski Hotel, which took nine years to complete, Jahn devised a glass-and-fabric canopy that lights and naturally ventilates a large train-arrivals courtyard. To provide a diaphanous facade, he hung a veil of glass from a weighted cable support structure—an early use of a glass-wall technology that has recently become au courant. In Cologne, Jahn simplified the programmatic complexity of the contemporary airport terminal with surgical elegance, reducing it to a light-filled shed supported by tree-form piers on a 99-foot-square grid [RECORD, August 2003, page 126].

These projects allowed Jahn to leave the work of "decorating buildings" behind, he said in an interview in his Chicago office. He has stripped down his look, too. It's now more Porsche Design than Perry Ellis. "With Postmodernism, I brought history into the buildings I was doing, but I still built in a modern way," he adds.

The European mandate to design workplaces that are simultaneously low-energy, low-carbon-emission, and high-comfort has played perfectly into Jahn's love of technology as an expressive means to solve problems. He described his current approach at the inauguration of State Street Village (page 130): "This building stands for an attitude that progress and new expression in architecture come not so much from form and style but through integrating architecture, engineering, and a straightforward expression





Daylight is abundant in Bayer's lobby (above), but carefully modulated for dramatic effect by shading devices or scrims of metal mesh. "Buildings are luminous, not illuminated," Jahn has written.

of components, materials, and parts in construction."

The idea that innovation and technology are innately progressive has taken a beating over decades of nuclear threat and the high-tech transport of terror. For Jahn, technology's allure is as fresh as ever. "I'm concerned with how a building works, the comfort of its users," Jahn says, but when he talks about how he achieves those goals, he speaks in terms of building technology, which imposes a rigor he welcomes. Architecture must assume responsibility for more than form and aesthetics, he has written. It will succeed "through engineering and performance, rather than design and styling."

REFINEMENTS—WHICH MOST PEOPLE WOULDN'T NOTICE—ARE PERFECTED OVER YEARS.

While Jahn presides as the sole design eminence at Murphy/Jahn, his recent work relies on collaborating with two specialized outside practices. He's indebted to engineer Werner Sobek for the athletic detailing of specialized facade components and to Matthias Schuler, of Transsolar, which specializes in the emerging field of climate engineering. Schuler's work expands the border of traditional engineering by reducing mechanical air-conditioning, and its associated ductwork and equipment, and replacing it with a passive, low-energy design that relies on architecture and structural engineering. Both firms are based in Germany but now have New York offices serving a wide range of clients.

Sobek describes how the team focused on the intersection of facade and floor slab to increase transparency while reducing energy use: "We started by getting rid of the solid spandrel between floors. With Matthias, we avoided the dropped ceiling at the edge by integrating small, low-velocity displacement-ventilation devices in the floor slab instead. We narrowed the slab at the edge because it did not need to be thick there and integrated a tapered shape with the column location." Such refinement, which most people won't even notice, was perfected over several projects.

The double curtain wall in the headquarters of Bayer, in Leverkusen, Germany, takes the team's innovative insulating and ventilating concept to new levels of sophistication. Like Deutsche Post, the south side is shingled. To simplify the system and minimize the components, Jahn has made an external layer of frameless glass clamped only at the glass corners. The clamps are internally supported on every floor by a horizontal stainless-steel rod and braced by verti-

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It's easy to wonder how a mere human fits into this boundless world of machined beauty. Jahn does not intentionally create a mental discomfort, but his prodigious design capacity can seem boundless, too. The detailing of the elevators at Bayer (above) is spectacular—and obsessive.

cal planes of glass (page 98). Thin metal bars carry the accumulated lateral loads across the full-building-height void between the inner and outer facades. Pivoting blinds hang between the two glass walls for additional light control.

What Jahn, Sobek, and Schuler share is a commitment to materials, especially new materials, and construction as generators of form. This sounds like the old functionalist argument, but it doesn't end there. Jahn argues for light as the essence of the design, too. "The facade acts as a fabric that moderates the natural and artificial light. It becomes a screen."

THOUGH RATIONAL, ELEGANT, MACHINED, THIS IS AN ARCHITECTURE OF AMBIGUITY.

Jahn has remained loyal to Chicago even though he's gotten little work in the U.S. This drought is beginning to end, especially after the warm reception State Street Village has received. Currently, he is working on an SRO project for a nonprofit Chicago housing provider. Although his scheme is low-budget, "I'm trying to extend the materials, systems, and typology of IIT," he says. He's hoping to use a full-height radiant panel for low-energy heating and cooling. He's investigating rooftop wind turbines ("I found the supplier on the Internet," he says). Murphy/Jahn is also refitting terminals at O'Hare airport, including those Miesian pavilions dating from 1961 by C.F. Murphy (the "Murphy" of Murphy/Jahn), and Jahn's own landmark 1988 terminal for United.

But the most exciting projects remain those outside the U.S. A vast oversailing trellis is being completed to shade the varied structures of the 5-million-square-foot first phase of the new Bangkok International Airport, for example.

Though the work is rational, functional, machined, and elegant, Jahn has created an architecture of ambiguity. When you look in, you are not sure what you are seeing. The vertical glass fins at Bayer read like cables; the multiple layers of glass pile on reflections and patterns so that these "weightless" facades may look solid or translucent, and of indeterminate thickness and depth.

Jahn looks only forward, anticipating future developments, especially in glass. He wants to approximate in building facades "the wonderful adaptability of the biological human skin." Adds Donna Robertson, dean of IIT's school of architecture, "Because of his leadership in using technology to green ends, I think he's in a very strong period right now. I think this will be his moment." ■

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CHICAGO comes back

From the lakefront to the plains, a burst of architectural energy

By Blair Kamin

There is nothing quite so pitiful as an ex–heavyweight champion who loses his punch and puts himself on an analyst's couch. But metaphorically speaking, that was the state of Chicago architecture five years ago. The titles of the symposiums were telling: "Has Chicago Lost Its Nerve?" Or, in a nod to globalism: "Where in the World Is Chicago?" Even before then, prized commissions once monopolized by Chicago's talented architects were going to visiting stars, lending new relevance to the writer Nelson Algren's arch observation that Chicago had progressed from being the Second City to the Secondhand City. The wave of self-examination and the "starchitect" invasion represented the ultimate comedown for a toddlin', tough-guy town that once proudly and justifiably regarded itself as America's architectural capital.

Yet, as the AIA prepares to convene in Chicago for its annual convention, a remarkable revival is under way. The aesthetic timidity of the 1990s is gone. Bold Modernism is back. And while some of it comes from the pencil of visiting stars like Frank Gehry, whose exuberant music pavilion opens this summer in the new Millennium Park, many of the finest projects bear the stamp of leading local lights such as Helmut Jahn and Ralph Johnson. No longer moribund, either in its thinking or its building, Chicago has reasserted itself on several fronts, from new buildings that reanimate the city's tradition of the building art to new faces, like Jeanne Gang, Brian Strawn, and Karla Sierralta, who promise to invigorate its architec-

Contributing editor Blair Kamin is the Pulitzer prize–winning architecture critic of The Chicago Tribune.



PHOTOGRAPHY: © BILL ROSS/CORBIS

DeStefano Keating Partners' One South Dearborn Tower (left) features a backlit, textured-glass curtain-wall facade. The sleek interiors of the Hard Rock Hotel (center top), by Yabu Pushelberg, breathes life into the landmark Carbon and Carbide Building (right), just renovated and expanded by architect Lucien Lagrange. Perkins & Will's clean, rectilinear condominium complex at 516 North Wells (center bottom) fits retail, residential, and parking spaces onto a tight site.

tural scene for years to come. Even Mayor Richard M. Daley, who long acted as a retro force, has publicly endorsed the cause of innovation and is pushing the envelope on green architecture.

Perhaps the surest sign of Chicago's improving health are the passionate arguments sparked by such controversial structures as the renovated Soldier Field, by Wood + Zapata and Lohan Caprile Goettsch, and Rem Koolhaas's McCormick Tribune Campus Center at the Illinois Institute of Technology. Mies famously said: "Build, don't talk." But Chicago long has been a city of great debates as well as great buildings, an exporter not just of drop-dead design but powerful polemics and ringing aphorisms ("Form ever follows function"; "Make no little plans"; "We don't invent a new architecture every Monday morning"). Five years ago, there wasn't much to incite a minor street brawl. Today, as Joseph Giovannini and Stanley Tigerman demonstrate in their debate over Soldier Field (page 114), the intellectual slugfest has returned and the gloves are off—fresh evidence that Chicago is again its volatile, cantankerous self.

Chicago is easily misunderstood, especially by those who swallow whole the Modernist myth that starts with the paradise of Louis Sullivan's Eden, portrays Daniel Burnham as the snake who tempts Chicago to bite the Beaux-Arts apple, and ends with the triumphal restoration of Miesian Modernism after World War II. Yet, as Chicago architect Jack Hartray has observed, Frank Lloyd Wright's romantic, organic oeuvre cannot be neatly tucked into the rationalism and reductivism of the International Style. And neither does the Modernist myth adequately describe the work of such humanistic Chicago innovators as Harry Weese. To take off the Modernist blinders is to realize that Chicago does not obtain its extraordinary vitality from a rigid, monolithic continuum of styles. Rather, that vibrancy arises from the clash of many styles and their juxtaposition within a restless, ever-shifting cityscape. Even Gehry has expressed his admiration for the civility of the Beaux-Arts connective tissue with which Burnham sought to transform Chicago, Carl Sandburg's "Hog Butcher to the World," into Paris on the Prairie. Daley, to his credit, has reestablished that tradition, using infrastructure and beautification to "Martha Stewartize" the streets. In the process, he has helped stoke the nation's largest high-rise residential building boom.

Chicago **Insiders**



As notorious public-housing high-rises at complexes like the Robert Taylor Homes and Cabrini-Green come down, new luxury condominium and apartment towers are going up along posh Michigan Avenue. Unfortunately, the vast majority of the new towers are exposed-concrete tombstones beneath which the art of architecture lies buried. They exemplify capitalism unfettered, another Chicago tradition that historically has given architects and their hustling developer clients free reign to produce the best of the best and the worst of the worst. It is not for nothing that the historian Perry Duis has labeled Chicago "the great American exaggeration," expressing at larger scale—and often in excruciating contrast—design trends evident in smaller American cities.

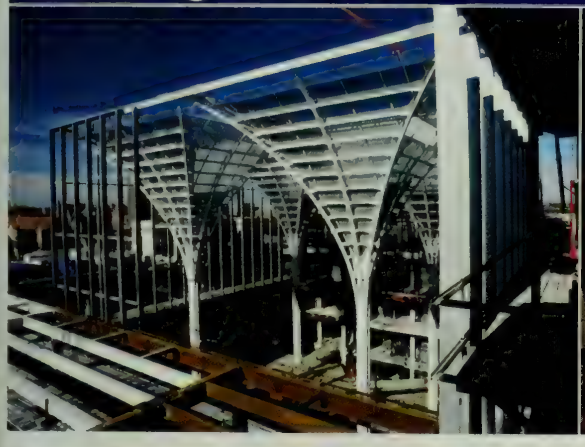
Today's best include Johnson's Skybridge, a vertical village that explodes the cliché of the concrete hulk, with its enormous, windowlike voids and a bridgelike trellis that tops its pair of slim, interconnected towers. Skybridge firmly fits into the Chicago tradition of bold, innovative architecture. It is at once sympathetic to its urban context yet in the end transforms it.

The next big splash in the high-rise residential boom may come next fall, when Donald Trump has said he will begin tearing down the bargelike Chicago Sun-Times building along the Chicago River. It is to be replaced by a 90-story condo-hotel tower, by Adrian Smith of Skidmore, Owings & Merrill, that could be Chicago's second-tallest building after the 1,450-foot Sears Tower. The lack of adverse reaction to Trump's project, a handsome asymmetrical setback tower, speaks volumes about Chicago's take-it-in-stride attitude toward great height. Been there. Done that. Let the new Chicagos—the Shanghais, the Taipeis, the Kuala Lumpurs—build their trophy towers.

Jahn's spectacular evolution is another sign of Chicago's rising fortunes. He's no longer "Flash Gordon," the sexy superficial star whose buildings were as facile as the gangster attire he once sported on the cover of *GQ*. Instead, he has become a mature master who fuses technology and aesthetics to produce supremely elegant green architecture.

At IIT, the great citadel of Modernism 4 miles south of Chicago's Loop, he's one-upped Koolhaas's far more heavily publicized Campus Center with a 550-foot-long dormitory, sheathed in corrugated steel, that is a masterly exercise in ele-

Chicago **Outsiders**







At the University of Chicago, Rafael Viñoly's Graduate School of Business (model, top right) will surround his glass-enclosed Winter Garden (photo, top left), a modern evocation of the campus's Gothic Revival character. Also at the university, the roof of the Gerald Ratner Athletics Center by Cesar Pelli (bottom) rests on 125-foot-tall steel masts, a nod to Gothic flying buttresses.

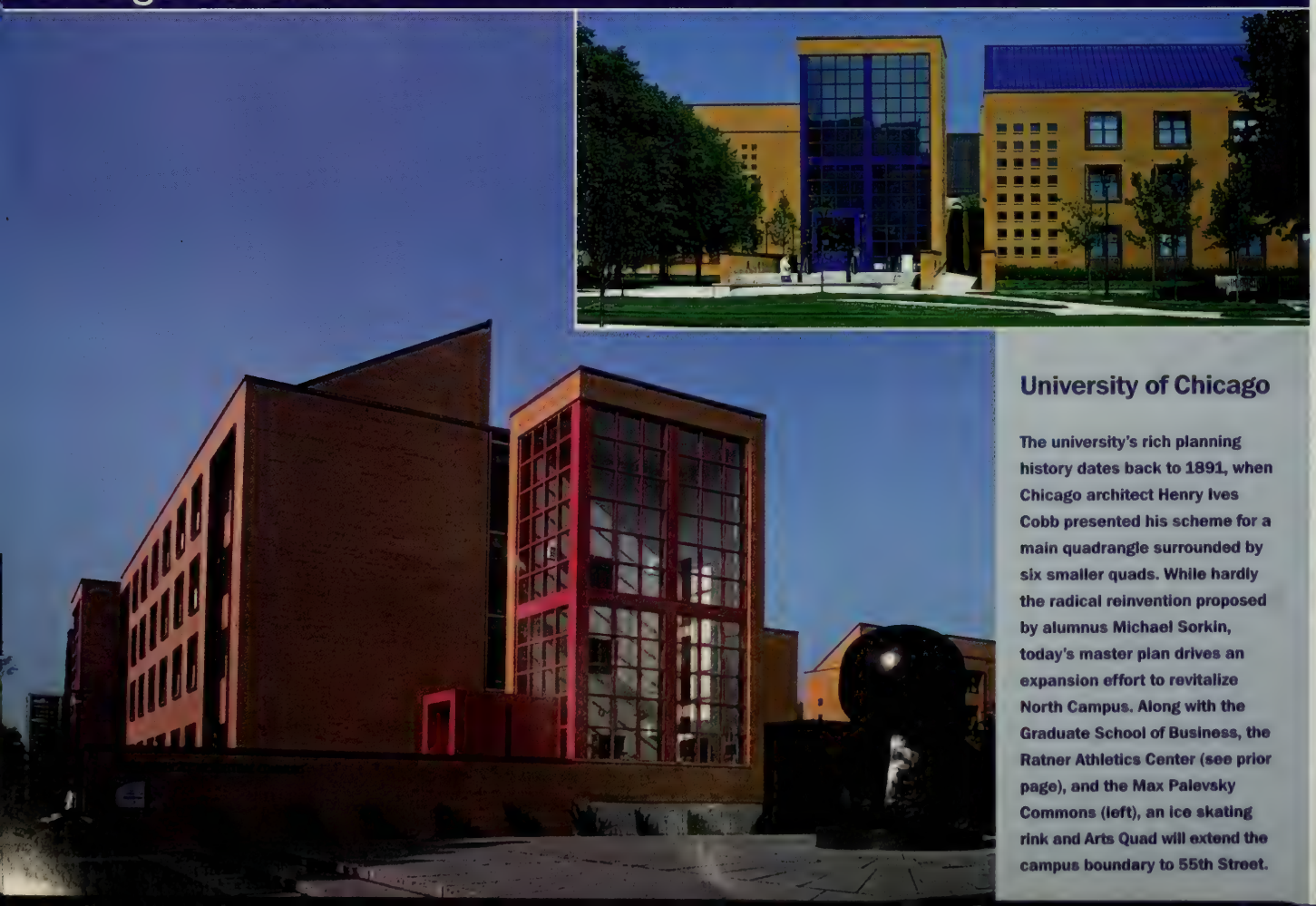
Ricardo Legorreta's new Max Palevsky Residential Commons (below) envelops Regenstein Library to form intimate courtyards within a new quadrangle. The Mexico City–based architect divided the facility into "houses" in a linear plan that matches the proportions and scale of the seven original quads.

vating simple construction to the level of art. The dorm freshens the Miesian ideal of *Baukunst*, in which the art is a refinement of the building. At Koolhaas's neighboring Campus Center, by contrast, the outcome is in many ways compelling, but ultimately less satisfying. The Center offers the flourish of a corrugated steel tube that wraps around the elevated tracks in order to muffle the roar of Chicago Transit Authority trains. It also has some remarkable interior spaces, which Koolhaas created by excavating the ground beneath the one-story building and by blurring the conventional boundaries between interior circulation paths and the activities they typically divide. Yet this is a building where the art is additive rather than integral and, in far too many, highly visible instances, God isn't in the details. There are "yes" buildings and there are "yes, but" buildings. The Campus Center belongs among the latter, falling short of the high expectations for it—and the Chicago standard of giving ideas extraordinary material realization.

Just as the side-by-side pair at IIT sharpens the argument over the future of Modernism, so the revamp of Soldier Field has emerged as a flashpoint in the ongoing debate about how to adapt old buildings to new use—and whether bold Modernism has become too bold.

Buying into the old Modernist mythology, the avant-garde defenders of the stadium have labeled its critics neo-trad Luddites who worship at the altar of Beaux-Arts Classicism. They should spare us this straw man. Yes, the renovated Soldier Field has genuine merits, especially the stylized athleticism of its remarkably intimate interior. But it has impossible-to-dismiss demerits, notably a bulbous grandstand that weighs down brutally on the stadium's landmark colonnades—an eyesore for thousands of passing drivers every day. The result mars Chicago's greatest public space, its lakefront, for the benefit of a privately owned professional football team. I wrote earlier, of course, that Chicago's downtown is enlivened by the clash of skyscraper styles. Yet there is a difference between respectful contrast, as displayed by Norman Foster in his Reichstag renovation and addition, and this violent contrast, which imposes an aggressive sculptural form on both a National Historic landmark and the landscape in which it sits. All the slick photography in the world cannot mask the grotesque juxtaposition of scales that

Chicago **Outsiders**



University of Chicago

The university's rich planning history dates back to 1891, when Chicago architect Henry Ives Cobb presented his scheme for a main quadrangle surrounded by six smaller quads. While hardly the radical reinvention proposed by alumnus Michael Sorkin, today's master plan drives an expansion effort to revitalize North Campus. Along with the Graduate School of Business, the Ratner Athletics Center (see prior page), and the Max Palevsky Commons (left), an ice skating rink and Arts Quad will extend the campus boundary to 55th Street.

forms the stadium's most visible public face.

While Chicago fumbled its tradition of enlightened lakefront planning on Soldier Field, the storm of controversy over the stadium at least had a silver lining: It forced Daley, the stadium's prime political backer and for years a conservative patron who put the kibosh on daring designs, to publicly defend innovative architecture. If he's serious about following through, there's a new generation of rising Chicago talents ready to respond. As John Czarnecki writes (page 90), many of them, like Brian Strawn and Karla Sierralta (finalists in the World Trade Center Memorial design competition), are attracting attention through competitions.

Others, like Studio Gang and Doug Garofalo, move easily between academia and practice and are creatively exploring computer technology and materials, as in Gang's much-praised *Stone Curtain* (shown below) at the recent *Masonry Variations* exhibition at the National Building Museum in Washington, D.C. Several of the rising stars were named finalists in the city's competition for a new environmental center in Chicago's industrial Calumet area, marking the first time Daley has put his political muscle behind cutting-edge green design.

When the AIA convened in Chicago in 1993, green architecture was largely viewed as the glimmer in the eyes of a few visionaries like Philadelphia architect Susan Maxman, then the organization's president. But in the past 11 years, the movement has built monuments like Foster and Partners' Commerzbank in Frankfurt and Swiss Re tower in London, and it has made significant inroads in the United States, where green building practices are increasingly widespread—everywhere, it seems, but among commercial developers who don't want to assume the higher first costs. Perhaps Chicago and the nation are at a threshold—ready to move from spectacle to sustainability as architecture's guiding force. Perhaps the city is again ready to export the archetypes of a new era. Perhaps Chicago can be in the vanguard of a truly progressive Modernism, one that is at once visually assertive and respectful of both the landscape and the need to conserve scarce resources.

But that's just dreaming. For now, it's a pleasure to observe that the old slugger is up off the analyst's couch and has regained its punch.

Chicago is back. ■

Chicago **Next Wave**









Studio Gang's "Stone Curtain" (top left), shown at the National Building Museum, is a puzzle of interlocking pieces that conveys surprising lightness. Gang's Chinese American Service Center (top right) features luminous titanium 'scales.' Last year, at the Museum of Contemporary Art, Garofalo Architects wove steel flyovers, fabric clouds, and other structures into a networked landscape on the plaza (bottom right). Yellow fiberglass ribbons achieve a similar effect at a house in Green Bay (bottom left).



Viewed from Lake Michigan, Wood + Zapata's Soldier Field breaks up the Classical symmetry of the original structure, designed by Holabird & Roche between 1922 and 1928.

Boston architects Wood + Zapata stir up controversy at Chicago's SOLDIER FIELD, inserting a Modern stadium into a Classically styled arena

Oh, irony of ironies. The last time Chicago was invaded by East Coast architects was at the landmark World's Columbian Exposition of 1893. Back then, the New York and Boston architects brought academic Classicism to a city giving birth to the spare, efficient, Modern architecture of its skyscrapers. Now, Wood + Zapata of Boston is bringing edgy futuristic design to the city and plopping it down in the middle of Soldier Field, a Classical-style stadium built by the Chicago firm Holabird & Roche between 1922 and 1928. The bold act has created a brouhaha in the papers and engendered lawsuits from preservationists. To cover the outcome of the imbroglio, RECORD *has turned to New York critic Joseph Giovannini for one point of view, and to Chicago architect and educator Stanley Tigerman for his take on the matter.*

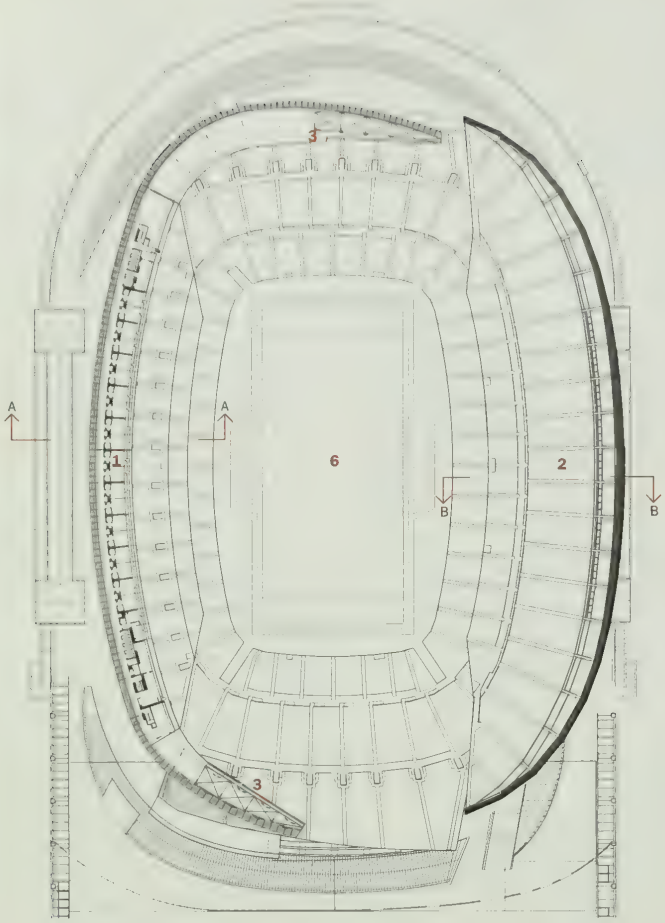
By Joseph Giovannini

Optical reciprocities between ball and bleachers overwhelmingly determine the design of sports buildings. Architects typically derive the diagram for arenas from wrapping walls around optimal lines of sight to generate a box or a bowl. At Soldier Field in Chicago, however, Boston architect Wood + Zapata, working with Lohan Caprile Goettsch as the master planner, recently broke free of convention—scoring an end run into new precedent.

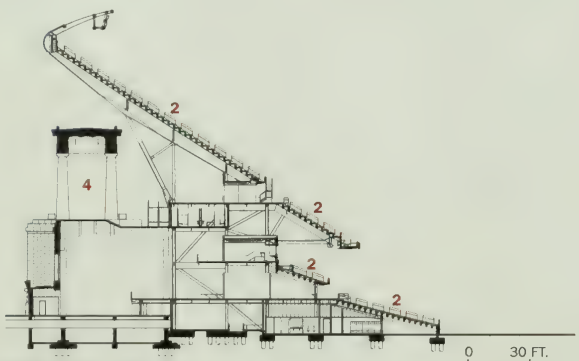
When Benjamin Wood and Carlos Zapata received the commission to update Soldier Field as a $385 million state-of-the-art venue for the

Joseph Giovannini is a practicing architect and critic for New York *magazine.*



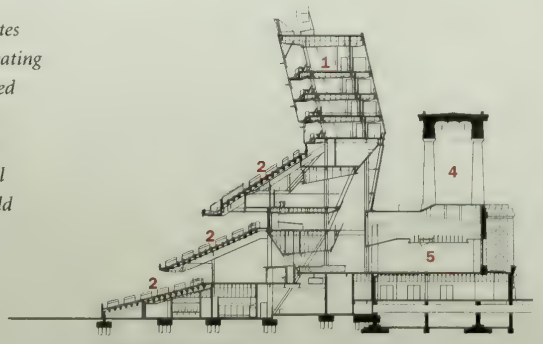


STADIUM PLAN



WEST CROSS SECTION B-B

1. *Luxury suites*
2. *Bleacher seating*
3. *Cantilevered scoreboard*
4. *Colonnade*
5. *Dining hall*
6. *Playing field*



EAST CROSS SECTION A-A

Chicago Bears football team (which has been playing there since the early 1970s), the architects faced the challenge of fitting a new, 62,000-seat bowl within the old one. In the process, the existing stadium—a long configuration originally devised for track and field—would lose seats, especially in the end zone, but gain a valuable sense of intimacy, placing spectators closer to the field of play.

With potential for radical change, the new bowl's design could even depart from the Classical axial symmetry of the existing Soldier Field, completed between 1922 and 1928, and later dedicated as a World War I memorial. The Chicago firm of Holabird & Roche had configured the poured-in-place concrete stadium as an open-ended horseshoe with two colonnaded, templelike entry gates crowning its perimeter wall. But the idealized horseshoe barely acknowledged the specifics of its context and site (in a park on Lake Shore Drive), other than its obvious axial orientation to the Field Museum's portico. The stadium and surrounding buildings had emerged from the City Beautiful movement, launched in Chicago by the World's Columbian Exposition of 1893, inspiring grand axes with Beaux Arts (and later, Art Deco) structures clustered in parks along Lake Michigan.

When Wood + Zapata analyzed the program to be inserted into the 1920s stadium, functional necessities, teeming with potential asymmetries, soon challenged the purified geometry, as did the particulars of place. The media box, for example, would have to occupy the south sidelines to

FUNCTIONAL NECESSITIES, TEEMING WITH POTENTIAL ASYMMETRIES, CHALLENGED THE PURIFIED GEOMETRY.

give cameras optimal sun exposure. In its semicircular arrangement, end-zone seating would differ from the straight bleachers along the two sidelines. In contrast to the sea of general seating, the luxury suites, sited on the north side opposite the media box, would require enclosure and could lean forward to optimize playing-field views.

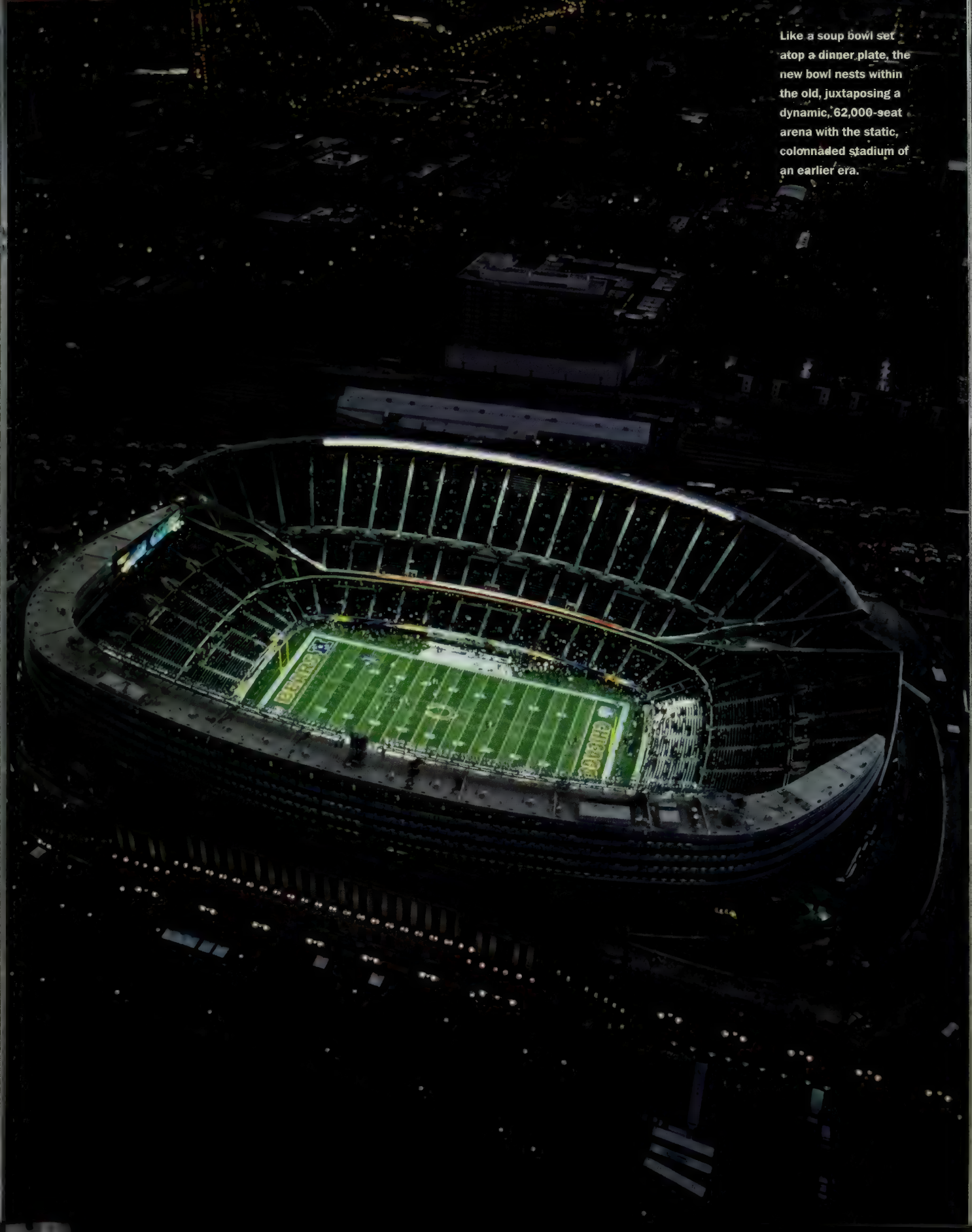
The new bowl, then, started subdividing itself into bilateral asymmetries and discrete, localized neighborhoods. Two important views inspired the architects to "crack open" the new arena's otherwise continuous rim, revealing the park and Lake Michigan to the south and the Chicago skyline to the north, connecting the stadium with its larger natural and urban context.

The geometry of the Holabird & Roche scheme had dominated and suppressed latent asymmetries that designers Carlos Zapata and Benjamin Wood chose to cultivate. Unlocking such qualities in the bowl's interior liberated its exterior from symmetry's girdle.

Conceptually, Wood + Zapata's strategy would set a high-rimmed soup bowl (the new arena) atop a dinner plate (the existing stadium)—creating a nesting composite, leaving the two components separate and distinct, but enriched by association. The architects developed an intentionally complex and dynamic language for the new bowl, playing it against the static, bilateral symmetry of the "dish."

As built, the two structures complement each other, not just formally, but also spatially. For the gap between the new and existing foot-

Project: *New Stadium at Soldier Field, Chicago*
Architects: *Wood + Zapata (design)—Benjamin Wood, Carlos Zapata, principals; Anthony Montalto, Joe Dolinar, project directors; Bretton Robillard, project architect; Lohan Caprile Goettsch Architects (master plan)—Dirk Lohan, Joseph Caprile, principals; Travis Soberg, project architect*
Engineers: *Thornton-Tomasetti (structural); Soodan &Associates (restoration); Ellerbe Becket, Environmental Systems Design (m/e/p)*
Consultants: *Peter Lindsay Schaudt (landscape)*



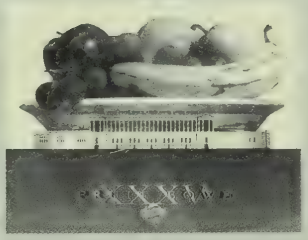
Like a soup bowl set atop a dinner plate, the new bowl nests within the old, juxtaposing a dynamic, 62,000-seat arena with the static, colonnaded stadium of an earlier era.

A CRITIQUE OF SOLDIER FIELD (AFTER THE FACT)

By Stanley Tigerman, FAIA

Many of us in Chicago first became aware of the extent of both the renovation as well as the new design of Soldier Field in 2001–2002. An elevation drawing of the proposal was published in the Chicago newspapers, amid growing criticism, right or wrong, of the way that the project appeared to be "shoved down the public's collective throat," as some have complained. Among the sample questions peppering the public outcry: "Who pays for it?" and "Who benefits from it?" None of this clamor did much good, and in any case had only a minor impact on the design. (As I recall, a couple of the topmost rows of seats were deleted in order to assuage dissidents concerned about the height of the project).

And, after the city spent nearly $700 million, no retractable roof was in sight. Did this mean that it would be impossible to have a venue for the Super Bowl in Chicago?



Collage by Stanley Tigerman.

The lawsuit brought by the Friends of the Parks and the Landmarks Preservation Council of Illinois against the project failed, but all the council seemed to care about anyway was the fate of the so-called historic colonnade dating to the 1920s. Still, the clearly out-of-scale fruit bowl jammed in the colonnade stuck with me like a wad of Wrigley chewing gum, resulting in my response via a collage (above). Meanwhile, the struggle to save the never particularly scintillating Depression-era Classical colonnade resulted in the design's overwhelmingly misproportioned aggregation of old and new architectural elements, which thousands of motorists would see driving along Lake Shore Drive. It made you wonder about the economic benefits for the few versus the visual burdens inflicted upon the unsuspecting many, and the reassuring way in which architects respond primarily to their paying clients.

But that was then, and this is now. Twice a weekend, my wife, the architect Margaret McCurry, and I drive by Soldier Field. The more that I have looked at this piled-up train wreck, the more I have realized that the result wasn't so bad after all. To be sure, the curtain-wall facade on the lake side of the eastern skyboxes is cheap. And I wish (and here I happily reveal my Chicago-based preconceptions) that the Emperor's underbelly of the westernmost stadia had been left undressed and not metallically clad. During construction, when the supporting structure was exposed, it had a familiar expressionism commensurate with Chicago's true architectural tradition, and reflected in both the first and second Chicago Schools of architecture.

Particularly fascinating is the way that the skyboxes on the east, which protect the privileged few from the elements, don't actually collide or meet benignly with the seats on the west for the working class bravely suffering the harsh gales off the lake. After all, in real life, the two classes never meet anyway. The Eastern architects (Wood + Zapata) certainly got that right! The actual disjunction between the east and west seating accommodations is, in a way, a reiteration of the disunity between the colonnade and the spacecraft hovering above it.

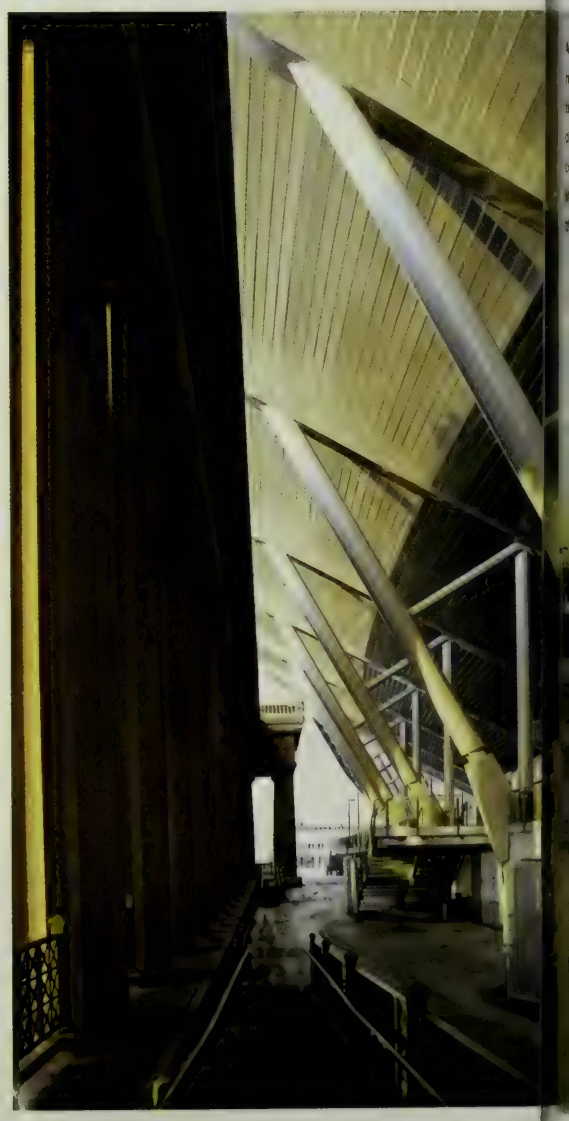
The stadium has what some of us may call an "unresolved, asymmetric dialectic condition." This project demonstrates the authority that is possible when disparate elements are conjoined, however ungainly the results might appear in the eyes of cautious contextualists.

So, although Soldier Field isn't all that it might have been, it has the boundless strength and energy associated with the crudeness of Chicago's outdated uncivilized collective reputation (e.g., Stockyards/Al Capone). There's no way that a native-born Chicago architect would have had either the chutzpah or such a perverted sense of irony to have pulled it off.

Is there an architectural moral to this story? Yes, because it suggests a possible lack of backbone in the native born. And no, because it's just another example of Chicago politics. We didn't ask for this massive structure on an otherwise sacrosanct lakefront, but it's here, it's ours (warts and all), and we will, I assure you, come to love it no less than we once loved our smelly stockyards.

Stanley Tigerman, FAIA, is a Chicago architect.







Angled glass helps reduce shadows on the temple gates, while dramatic diagonal steel columns convey upward lift (below). "Cracks" in the gestural, aerodynamic top rim afford lake and skyline views (above). Beyond the entry portals, interstitial spaces provide sites for circulation and concession stands.

prints, the architects carefully calibrated distances and details so that the outside of their modern shell and the inside of the old one face each other and define piazzas in between, with mobile food and drink concessions. Along the edges of this circulation and gathering zone, colonnades, impeccably restored, oppose the new bowl's steel understructure and hovering volumes. Where the architects angled the glass to minimize shadows on the east temple gate, a sunny canyon forms between the solid old facade and new glass one, dynamized by the wall's incline. Fans enter the layered stadium through the original, restored portals and then pass through the space-compressing interim area, before entering the wide, open bowl. The complexity is Piranesian.

To capture as many seats as possible in a stadium shorter than the original, Wood + Zapata arched the sideline seating in a sweeping curve up and over the old stadium's west gate. Now, cantilevered bleachers, precipitously poised above exposed steel structure, follow an elliptical path unlike the original underlying shape—terminating in a top rim as gestural as a line drawing. The aerodynamically contoured bowl, floating over the temple form, charges the entire visual field with a sense of acceleration. Trusses at the south and north ends cantilever LED scoreboards daringly into space—like the arm of a quarterback releasing a pass—creating the gaps in the bowl's uppermost rim that reveal the long skyline, park, and lake views, far beyond the gridiron.

Rather than assume the language of Classical architecture through an arcuated or trabeated diagram system, the architects diagram gravitational forces, emphasizing horizontal thrust and diagonal lift, giving the bowl a sense of perpetual levitation. With sharply angled steel columns beneath the bleachers, Wood + Zapata perceptually minimize the structural role of these members and enhance the new arena's upward thrust, giving the hovering form a light presence. Structurally and visually, this bowl remains independent from, rather than seated on, the original colonnades.

THE ARCHITECTS HAVE DEVELOPED A DESIGN EMPATHETIC WITH THE SPORT, EVOKING THE PHYSICS OF THE GAME.

Unselfconsciously, the architects have developed a design empathetic with the sport, evoking the physics of the game. Here, minimal supports carry maximum weight with apparently effortless grace. The architects bypassed the mimicry of Classical language (not even in a Modernist idiom à la Mies). Instead, they lyrically nest a new structure within the old building—in dynamic contradistinction to its static and passive host.

With this reinterpretation of the sports arena, Wood + Zapata has challenged the tradition and logic of stadium morphology. The design also provides a convincing critique of Classicism. Whereas the myth of the ideal lies in immutable perfection, the new bowl posits change and movement as its philosophical basis. Just as science and the world have long since passed from Greek idealism into an Einsteinian age, Wood + Zapata has shifted architectural paradigms, transcending a Classical construct with a building that expresses contemporary thinking. Chicago has held front-row seats in the fight between the Classical and the Modern since the World's Columbian Exposition of 1893—where, according to Louis Sullivan, colonnades set the cause of architecture back a half-century. ■







PHOTOGRAPHY © DAVID SEARS FOR FIELD SPACE (THIS PAGE AND OPPOSITE, BOTTOM)

Sources

Structural steel: *Hirschfeld Steel*
Curtain walls: *Permasteelisa; Josef Gartner USA*
Wide-vision panels: *Glas Troesch*
Storefront system: *Vistawall Architectural Products*
Interior glazing: *Trainor Glass*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

Programmatic analysis generated the asymmetrical seating areas, which optimize sun conditions and sight lines (right). In the stands, angled columns support cantilevered bleachers in a sweeping, visually accelerating motion (below). Interior spaces accommodate a variety of functions, including a dining hall and a club level (opposite, top and middle). In the interim zone, soaring supports intersect with walkways to create a Piranesian effect (opposite, bottom).





Iconoclasm invades iconic territory with Rem **Koolhaas's** design for the new **IIT CAMPUS CENTER** in Chicago



Koolhaas encased the elevated train tracks in a stainless-steel-and-concrete tube and wedged the Campus Center underneath. "It takes 12 seconds for potential students to decide whether to apply," he says. "The building needs to catch their attention." State Street dorms by Murphy Jahn are in the foreground.





PHOTOGRAPHY: © RICHARD BARNES

By Suzanne Stephens

Mies without marble can be dry and sere. No matter how much Ludwig Mies van der Rohe's design for the Illinois Institute of Technology in Chicago exemplifies the highest and purest Modernism, 50 years after its construction (1945–68), the steel-and-concrete structures with brick-and-glass curtain walls look very quiet, almost lifeless.

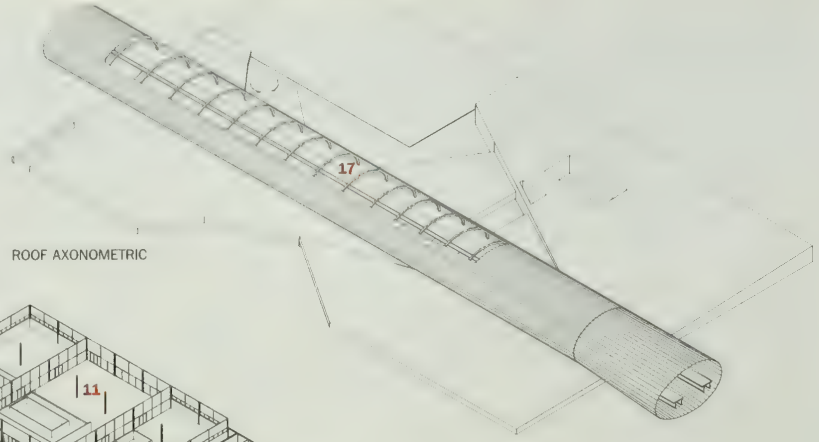
The McCormick Tribune Campus Center has altered the gestalt in one brash, bold blow. Designed by Rem Koolhaas and his Rotterdam-based Office of Metropolitan Architecture in association with the venerable Chicago firm of Holabird & Root, the exterior form looks almost like a one-story Miesian glass rectangle squeezed under—and deformed by—a 530-foot-long stainless-steel tube that stretches the length of its roof. Inside, diagonal circulation paths overlay a Miesian orthogonal plan, giving it a spatial dynamism. That vitality is bolstered by a slippery fusion of surface with section, where the ground level slides into a lower level, and spaces between ceilings and floors are compressed and expanded as you walk through the building.

Moreover, slickly gleaming planes for floors, walls, and counters add dramatic surface effects to the spatial ones. To counter these seductions, Koolhaas jolts the Center with juxtapositions of jarring colors and with slapdash insertions of rough-tech concrete or gypsum board on the exterior and interior surfaces.

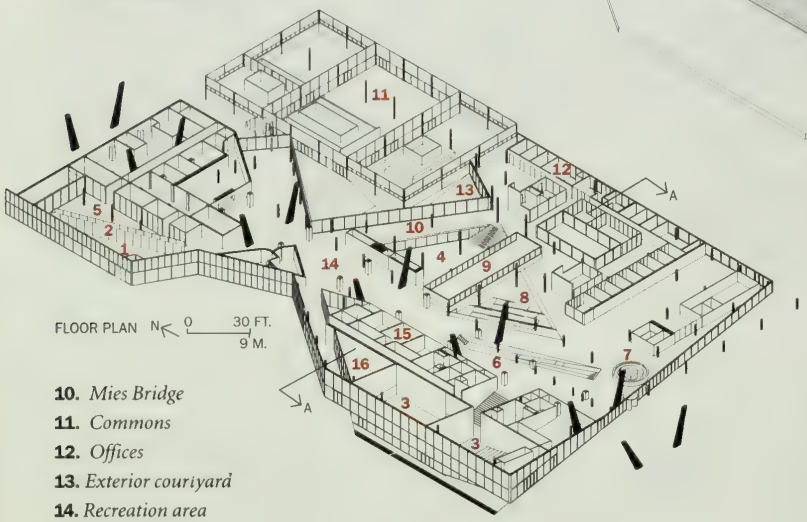
Aiming for the polymorphically perverse rather than the platonically perfect, Koolhaas mines architecture's potential for elegance and beauty, and then, sneering at its temptations, pushes it toward the subversive kitsch seen in the art of Jeff Koons or Damien Hurst or the purposeful frumpiness in the fashion design of Miuccia Prada or Helmut Lang.

Project: *The McCormick-Tribune Campus Center, IIT, Chicago*
Owner: *IIT*
Design architect: *Office for Metropolitan Architecture (OMA)—Rem Koolhaas, principal; Dan Wood project manager; Sarah Dunn, Jonilla Dorsten, Kristina Manis, Anne Filson, Jeffrey Johnson, project architects*
Architect of record and structural engineer: *Holabird & Root—Frank R. Castelli, AIA, principal; Dennis Vovos, AIA, project manager; Gred Gunloh, AIA, Michael Pancost, project architects*

1. *Main entry*
2. *Founders' Wall*
3. *Conference center*
4. *Center court*
5. *Faculty dining*
6. *Broadband (computer station)*
7. *Coffee bar*
8. *Ramp seating*
9. *Hanging garden*



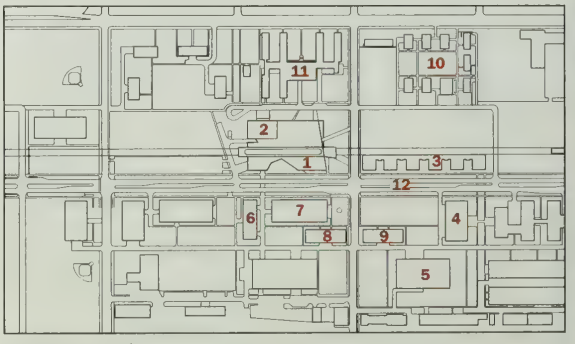
ROOF AXONOMETRIC



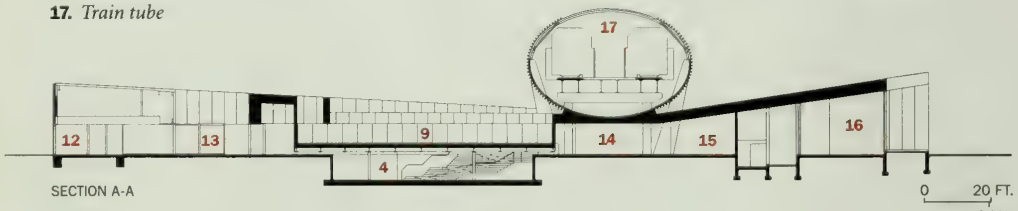
FLOOR PLAN N 0 30 FT. 9 M.

10. *Mies Bridge*
11. *Commons*
12. *Offices*
13. *Exterior courtyard*
14. *Recreation area*
15. *Meeting rooms*
16. *Executive conference room*
17. *Train tube*

1. *McCormick Tribune Campus Center*
2. *Commons*
3. *State Street Village*
4. *Crown Hall*
5. *Galvin Library*
6. *Alumni Memorial*
7. *Perlstein Hall*
8. *Wishnick Hall*
9. *Siegel Hall*
10. *Greek Housing*
11. *McCormick Student Village*
12. *State Street*



CAMPUS PLAN N



SECTION A-A 0 20 FT. 6 M.

The location for the 110,000-square-foot Center couldn't be worse—where the elevated Chicago Transit Authority train track divides the academic campus from the residential one. Koolhaas says he figured that the best way to buffer the train's rumbles was to wrap the tracks in an elliptically shaped tube, the lower half of which is concrete encased in corrugated stainless steel, and the rest stainless steel. Then he wedged the $34.6 million rectilinear structure underneath the $13.6 million tube on its 5-acre site adjoining Mies's Commons. The buffer idea does work: Outside the building, the noise of the trains passing frequently above is 120 decibels, while inside it is cut down to 70 decibels. Although riveted steel piers support the train tracks outside, they are replaced by square concrete columns within, while the stainless-steel tube itself is carried on wedge-shaped concrete piloti. In addition, Mies's famous black I-beams appear as columns in a gridded regularity supplemented by steel decking and joists, with a poured-in-place concrete slab on grade.

The idea for a new campus center emanated from a master plan drawn up by Lohan Associates in the 1996. Although the Mies-designed Commons, completed in 1953, functioned as the student union, the glass-and-steel pavilion had long proved too small. While the Commons is now used primarily for dining, Koolhaas was asked to provide space for computer terminals, pool tables and video games, a café, a faculty dining room, a bookstore, and an auditorium and conference center. Donna Robertson, who had just taken over as dean of IIT's College of Architecture in 1996 (see Profile, page 264), helped formulate the parameters for a two-stage competition, which Koolhaas won in 1998, beating out Zaha Hadid of London, Peter Eisenman of New York, Kazuyo Sejima and Ryue Nishizawa of Tokyo, plus Chicago's own Helmut Jahn.

Koolhaas thinks he probably won largely because he had emphasized one salient factor guiding the design: the students. He had tracked the students' movements across the site of the former parking lot, then meshed the diagonal patterns of those shortcuts with the orthogonal template established by the Miesian campus plan. "The building is all about moving," Koolhaas says. He extended this exercise to the section, recalling in part OMA's earlier Jussieu Libraries competition in Paris (1993). At IIT, the sectional play comes as a surprise because you enter a one-story building to find spaces dropping down to light-filled areas.

The surface gleam visually heightens the kinesthetic experience of walking through the shifting spaces. Students sip coffee or play billiards on

On the west (main) facade, a Panelite insulating glass unit is used for the exterior wall. Here, a computerized image of Mies van der Rohe applied by ceramic frit signals the entrance (right). Many of the double-glazed walls have orange polycarbonate tubular honeycomb infill, with orange PVB coating on the inner face of the exterior pane. An orange lenticular wall covering adds depth to the rear wall of the conference center (bottom).



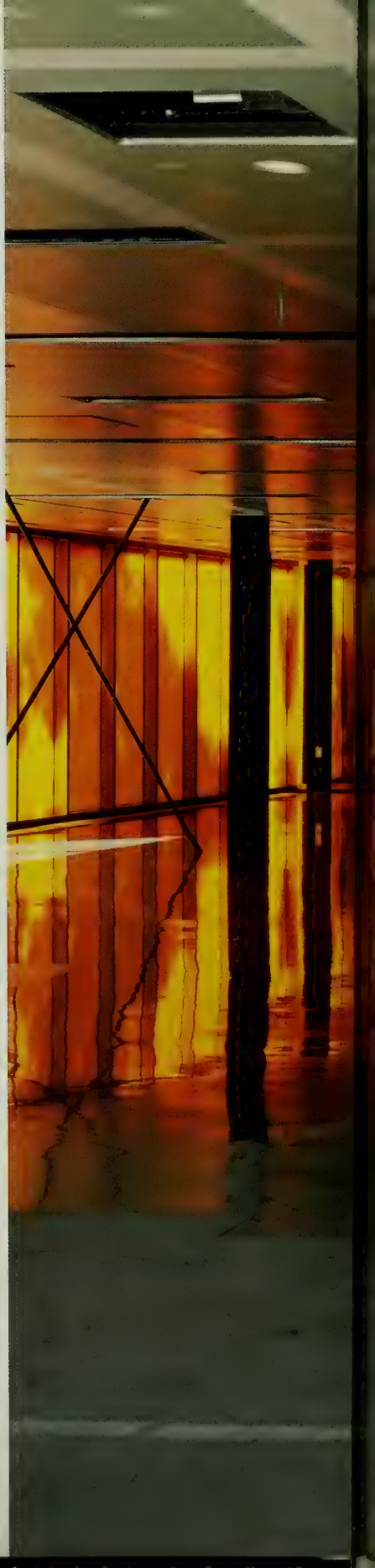








The "Founders' Wall," which includes an image of Mies in the entrance lobby (opposite), is formed from computerized pictograms applied by ceramic frit to glass. Behind this wall, a corridor descends to the faculty dining room (top left). Glossy epoxy-and-urethane poured flooring and plain gypsum-board ceiling. (middle left) appear throughout the Center, as does the orange glow from the Panelite system. A two-story dining area dropped below grade occupies the core of the Center (bottom left) between a bridge with a view of the Commons building and a suspended garden that brings in extra light.







The underbelly of the stainless-steel tube encasing the train tracks is exposed in the billiard area. Concrete piers support the tracks, while the concrete wedge-shaped piloti carry the tube itself. A channel of space for computers is marked by an illuminated polymer honeycomb counter.



floors covered in shimmering aluminum panels or coated in a glossy green, red, or gray poured-in-place urethane-and-epoxy material. The orange glass with polymer honeycomb (Panelite) imparts a sunset glow even on gray, cloudy days to areas where students mingle and talk. Elsewhere, panels of expanded aluminum honeycomb with cast-resin facings partition bathrooms, and polymer honeycomb panels with cast-resin facings form sculptural counters, carrels, and café tables for those studying or dining.

In addition, a jazzily patterned, orange lenticular wall covering associated with kitschy, touristic postcards gives two-dimensional surfaces an abstract, three-dimensional life in the conference center. A sophisticated graphic art program, conceived by Michael Rock of the New York City firm 2 x 4, has added further punch. For example, the firm developed small pictograms into large-scale computerized images of Mies and IIT's founders for a boldly dramatic glass wall at the main entrance.

Just as you are wowed by the glimmer, shimmer, and gleam of it all, Koolhaas cuts your taste buds dead with a massive intrusion of dully flat materials. Most assaulting is the red and black waterproofing on cement-board roofing used as the exterior fascia for the rectangular building. This tongue-in-cheek rendering of wood laminate, totally kitsch-ugly, is applied with intentional sloppiness, and its color clashes with the orange-tinted glass wall. Next to it, the unfinished gypsum board in off-white and light green for the interior ceilings looks artful. (Another touch of Koolhaas's let's-make-Mies-roll-over-in-his-grave cheekiness can be found in an interior wall covering created from scanned zebra wood.)

The surface effects and the fascination with the ordinary brings to mind Venturi and Scott Brown, whose work Koolhaas particularly responds to. But Koolhaas's interest in spatial maneuvers sets him apart. (Venturi says in Koolhaas's latest book, *Content* (Taschen Press), that space is no longer "the essential architectural element of our time.") Koolhaas and Venturi Scott Brown do agree that architecture should be grounded in a casual and fast spirit. Koolhaas always asserts, "Architecture is too slow." He has a point, since the Center took five years to complete, what with the transit authority's need to maintain train service throughout construction.

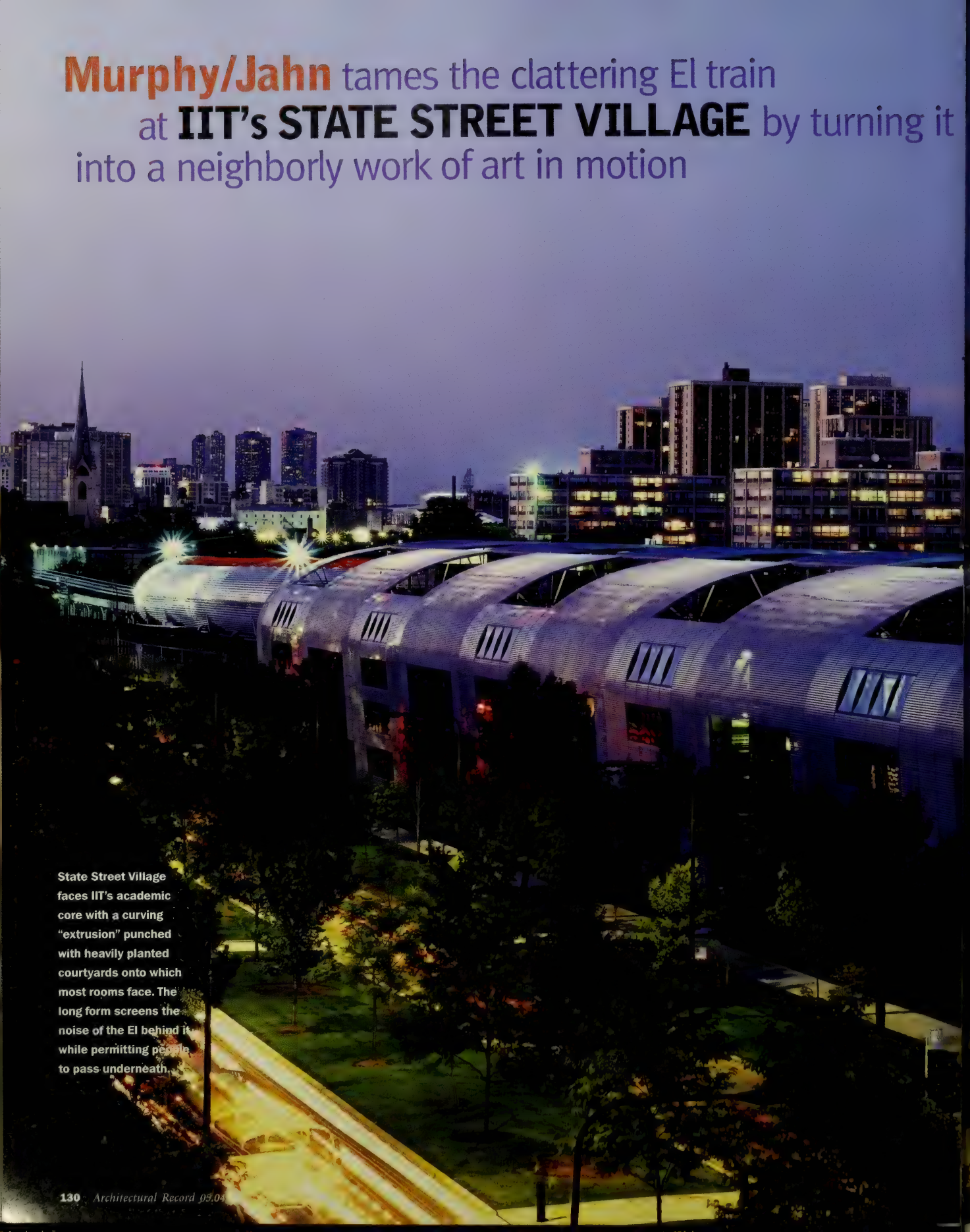
The cheap and fast parts of the Center challenge our long-held architectural values—of internal consistency, immaculateness of craft, elegance in material and detail. The building demonstrates that Koolhaas can give us these, but he wants to take architecture out of itself and join it with the worlds of commerce, certain kinds of art, and fashion. So what's wrong with that? Nothing, except that architecture does last longer. Or at least it has. There are those who still want to see it stand up in the rain, and be around for landmarking—especially when it has so much to offer. ■

Sources

CTA tube enclosure and SST decking: *Epic Metals Corporation*
Exterior and interior glass; partitions, carrels, counters, tables: *Panelite*
Aluminum curtain wall: *Wausau Metals*
Ceiling: *Tectum; USG*
Aluminum flooring : *Power Stretch*
Epoxy flooring: *Dur-A-Flex*
Lenticular wall covering: *DesignTex*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

Murphy/Jahn tames the clattering El train at **IIT's STATE STREET VILLAGE** by turning it into a neighborly work of art in motion



State Street Village faces IIT's academic core with a curving "extrusion" punched with heavily planted courtyards onto which most rooms face. The long form screens the noise of the El behind it while permitting people to pass underneath.

By James S. Russell, AIA

The El train may be an emblem of Chicago—ugly, noisy, pragmatic—but for decades it has divided the campus of the Illinois Institute of Technology, clattering across acres of parking lots. For Helmut Jahn, who came to IIT in the 1960s, it was his campus lifeline, the way to get to where he always wanted to be—the Loop and its towers hovering Oz-like over the flat plane of the city.

He took the El from IIT in 1967 to join the Chicago firm of C.F. Murphy, then run by Gene Summers, who would become a mentor. Invited to compete more than 30 years later for an IIT dormitory project backing up on the El, Jahn saw not an environmental menace to be alleviated, but an opportunity to pay homage to a work of civil engineering—however aesthetically challenged—that had meant a great deal to him.

Jahn's El love did not get him the job. Donna Robertson, the Dean of IIT's school of architecture (page 264), and a leader in the rejuvenation of its neglected physical plant, explains: "When we reached the end of Helmut's presentation, and we saw that terrace space on the roof and what kind of place it could be, that was it." She refers to the decks carved out of the curving arc of the roof atop the five-story structure (page 134). Though the elegance and power of the IIT buildings by Mies van der Rohe and other like-minded architects still commands respect today, the





The corrugated-metal cladding is perforated over the courtyards for afternoon shading. El trains silently pass behind the transparent lobbies and elevator.

sober image the old campus presented did not exactly promise a joyous student life. Both Jahn's State Street Village, housing 367 students, and the adjacent McCormick Tribune Center (page 122) address the student experience directly, though in almost completely opposed ways.

Both structures signal a rebirth for the campus and the neighborhood. IIT has hunkered as Chicago's South Side spiraled into deep poverty. Today, the turnaround in the city and in nearby Bronzeville (once Chicago's vibrant answer to New York's Harlem) is palpable, and IIT is revitalizing as well, in the process trying to tie itself more closely to its neighborhood. A $120 million gift in the 1990s by Robert Pritzker and Robert Galvin has boosted the school's academic and physical rebirth.

State Street Village was positioned on this difficult site according to a campus master plan developed by Lohan Associates. "So many of our students are in science and technology programs," explained Robertson. "They can seem happiest staring into a microscope for hours. But our campus too often looked empty." The plan put more activity on State Street, which—with the El—divided the campus, by proposing to line its empty eastern side with new buildings.

Jahn drew a long, linear building to echo the implied movement of the El. He curved the envelope in section "like an extrusion, a streamlined object," he says. In plan, he arranged the combination of suites (each including a shared bath) and apartments around five courtyards, two of which punch through so that people can readily pass from residential facilities to the east to the academic core on the west. Adds Robertson, "Helmut cleverly negotiated between the master plan and the Koolhaas strategy at the Tribune Center to keep space under the El open to movement between the campus and the neighborhood."

Jahn achieves privacy, a clean appearance, and ample light inside with floor-to-ceiling, deeply tinted glass supported by mullions as thin as the standard-curtain-wall budget would permit.

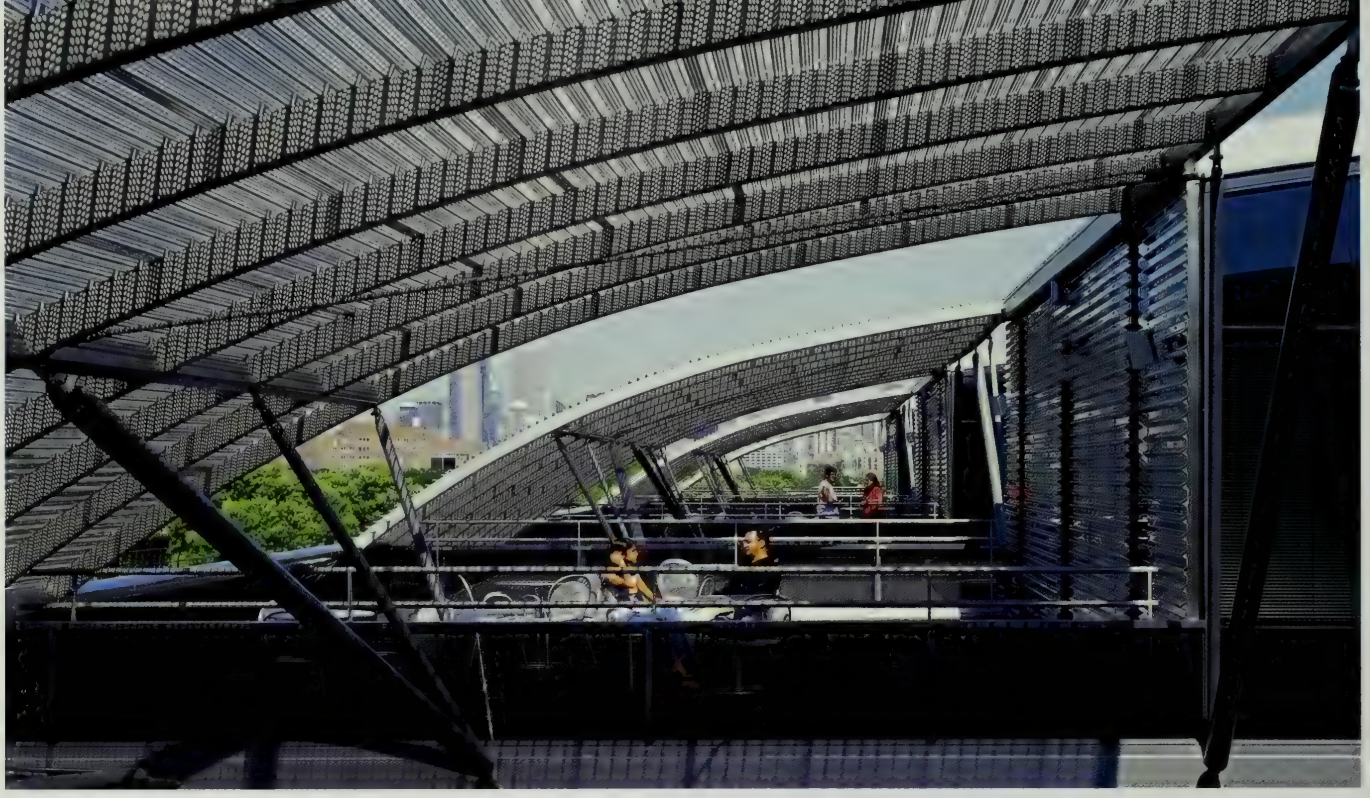
The layout of suites and apartments (rather than rooms separated from baths) responds to student preferences. Media lounges with wireless-Internet connections and wall-mounted plasma screens have

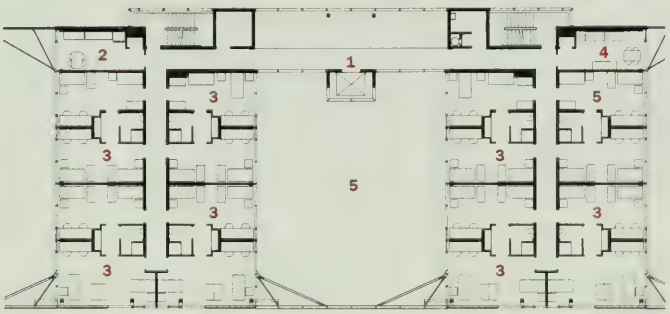
Project: *State Street Village, Chicago*
Owner: *Illinois Institute of Technology*
Architect: *Murphy/Jahn—Helmut Jahn, John Durbrow, Peter Hayes, Chad Mitchell, Dan Cubric, Naotami Yasuda, Salim Bou-Saab*
Engineers: *Werner Sobek (structural); Transsolar (mechanical concept)*
Consultants: *Peter Lindsay Schaudt (landscape); Dorsser Raadgevende (acoustics)*
General contractor: *W.E. O'Neil*

Jahn stretched a plane of glass (a laminated three-sheet thickness) along the El side (far right), extending it across the courtyards (above) and beyond the edges (right). It cuts the noise and presents passing trains as works of art in motion.









TYPICAL FLOOR (SUITE UNITS)

N ← 0 10 FT. 3 M.



TYPICAL FLOOR (APARTMENT UNITS)

1. *Lobby*
2. *Shared kitchen*
3. *Shared bath units*
4. *Laundry*
5. *Courtyard*
6. *Apartment units*

been popular, as is the ability to monitor clothes-washer progress via the Internet. The full transparency of the lobbies and elevators isn't merely elegant; it increases security by making the spaces visible inside and out. The openness also enlivens the street, especially at night.

Neither State Street Village nor the Koolhaas/OMA McCormick Tribune Center down the street could be thought contextual extensions of the singular artistic vision of the "classic" IIT campus. Koolhaas visually punches Miesian sobriety in the face by luridly squashing the Tribune Center under the El with a functionally gratuitous tube. Even the bows it takes to Mies are tinged with Oedipal aggression, like the Modernist curtain wall jokily tinted orange. The Murphy/Jahn village is temperamentally cool, akin to Mies, and possesses a reassuring gravitas compared to the Tribune Center. Somehow, the stripped-to-fundamentals grandeur of Crown Hall, right across the street, manages to make even the Jahn structure look a bit slick, its curve, screens, and braces almost frivolous. In no other context could one say that about State Street Village.

IIT has more construction planned, says Robertson, including restoration of several of the campus's Modern landmarks. But don't the new structures diminish the legacy of Mies? "We think of these as 'beyond Mies,'" says Robertson. "We needed to show a commitment to the South Side campus; we're responding to student desires and supporting architectural excellence. Mies said architecture should be the will of the epoch translated into space. We're expressing the will of *this* epoch." ■

Sources

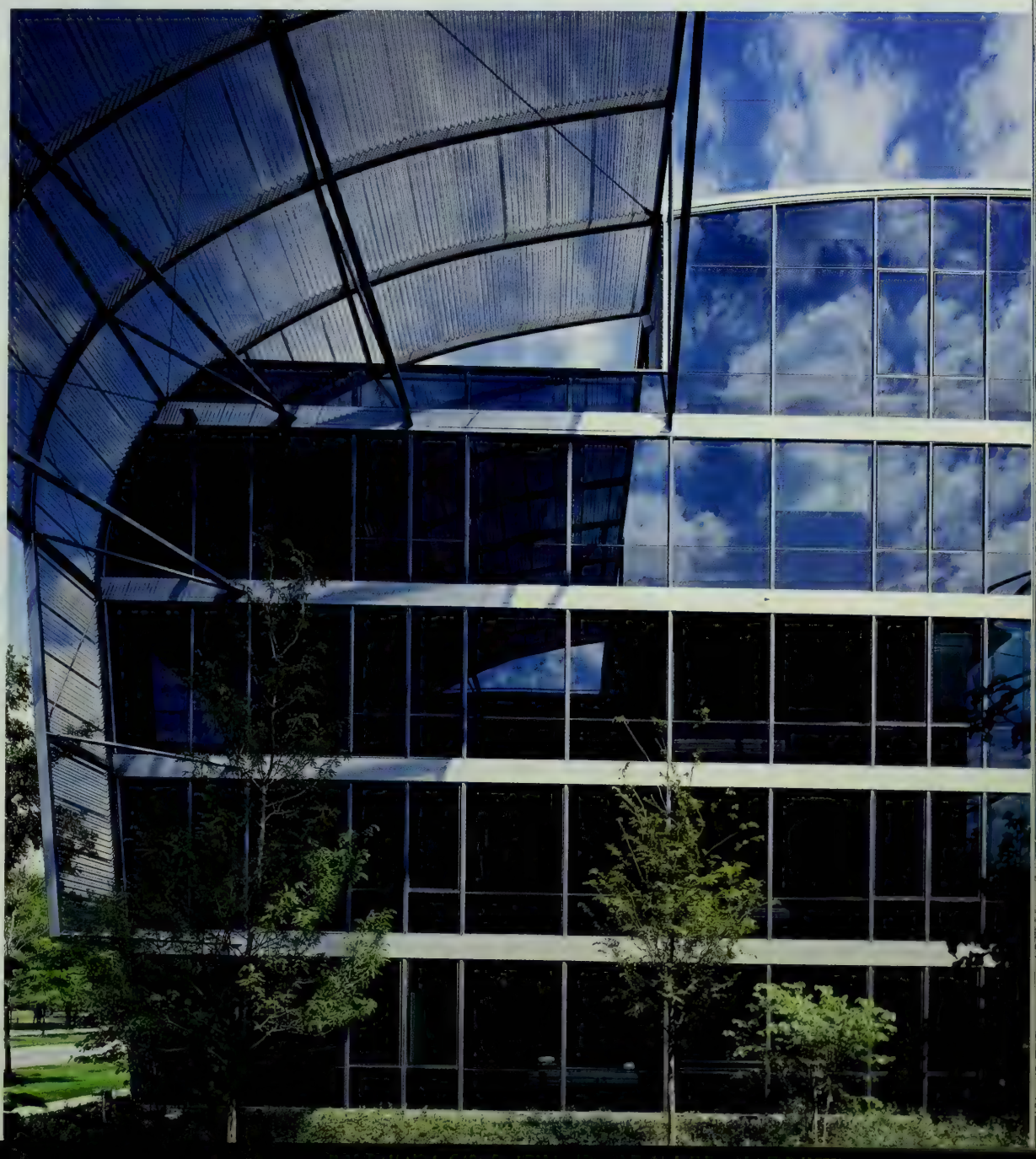
Structural system: *WSI; Mero Structures*
Curtain wall: *Arcadia*
Metal roofing: *G. & L. Associates*
Aluminum windows: *Moduline; Kawneer*
Glass: *Viracon*
Furniture: *Heltzer (Murphy/Jahn, designer)*
Elevators: *Mitsubishi*

For more information on this project, go to Projects at **www.architecturalrecord.com**.





Perforated screens protecting the courtyards open to rooftop terraces (opposite). Tubular braces reduce the thickness of the screen's spanning supports (right). Similar diagonal tube supports brace narrow horizontal mullions at the courtyard's El-facing glass walls (visible on page 133). They combine with suspended vertical cable supports to resist substantial wind loads with a minimum of material. With concrete floors and ceilings, the lobby (top right) and room interiors (top left) offer an industrial look that today's students seem comfortable with.



Ralph **JOHNSON** of Perkins & Will pulls apart the high-rise apartment building, then reassembles it at **SKYBRIDGE**



The $95 million project (right) rises above the Kennedy Expressway and enjoys great views of the downtown to the east (left spread).

PHOTOGRAPHY: © STEINKAMP/BALLOGG, EXCEPT AS NOTED; NICK MERRICK/HEDRICH BLESSING (RIGHT)

By Clifford A. Pearson

When asked why he thought Ralph Johnson of Perkins & Will won the competition to design Skybridge, a fellow Chicago architect familiar with the project shook his head and exclaimed, "He broke all the rules!" As every architect who has designed high-rise housing in America knows, the building type comes laden with a litany of rules and customary practices that have resulted in a limited number of design formulas favored by developers. Look around our cities and you'll find numerous apartment buildings shaped by cookie cutters.

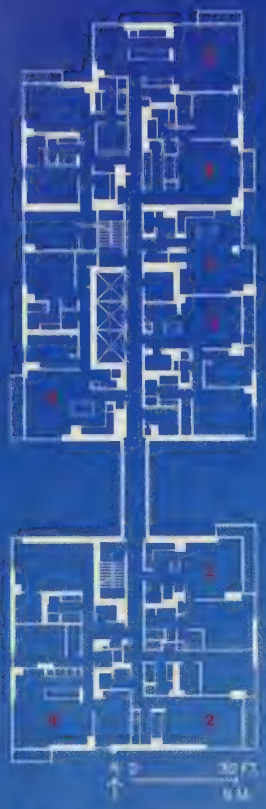
Never having designed a residential tower before, Johnson brought a fresh perspective to the often hackneyed art of multifamily housing design. Instead of creating yet another monolithic vertical slab, he pulled the building apart so it reads as an assemblage of pieces separated by voids and glazed bridges. "We wanted to do a Modern apartment tower, one that made a statement," says Johnson. Rising above the Kennedy Expressway on the western edge of downtown, the 39-story building enjoys unobstructed views east to the city's skyline and serves as a gateway to the low-scale Greektown neighborhood at its feet. "The idea was to take full advantage of the site and the views downtown," states Howard Weiner, president of Dearborn Development, which developed the property. "I felt we could push the envelope architecturally with this project. We had gotten in a rut in Chicago and had not produced any really innovative towers in a number of years."



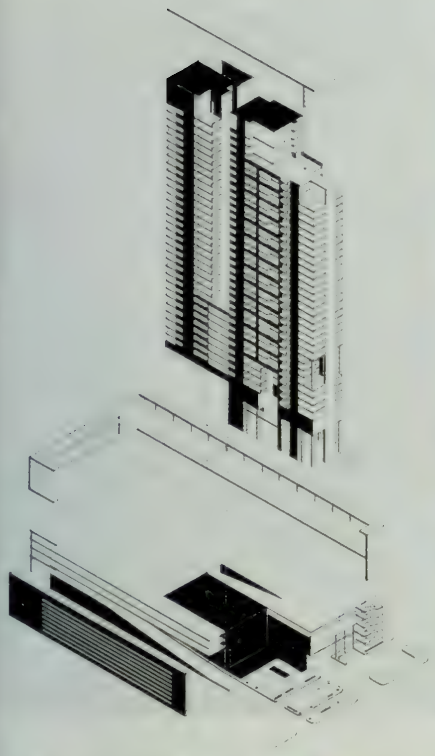
Dearborn, which had built low- and mid-rise housing, as well as retail and commercial projects, decided to solicit new ideas, says Weiner. So it invited Johnson, plus Murphy/Jahn and Nagle Hartray Danker Kagan McKay, to propose designs in a competition for the job. "Ralph did a great job with the massing," explains Weiner. "By breaking down the building into what's essentially two towers and creating multistory voids, he created an urban village."

Johnson's initial scheme arranged apartments along a single-loaded corridor, so they all faced downtown, and featured a solid concrete roof plane dramatically cantilevered above the penthouse units. In the end, the single-loaded scheme didn't work. But thanks to the see-through bridges and glazed corners, many of the apartments on the western side

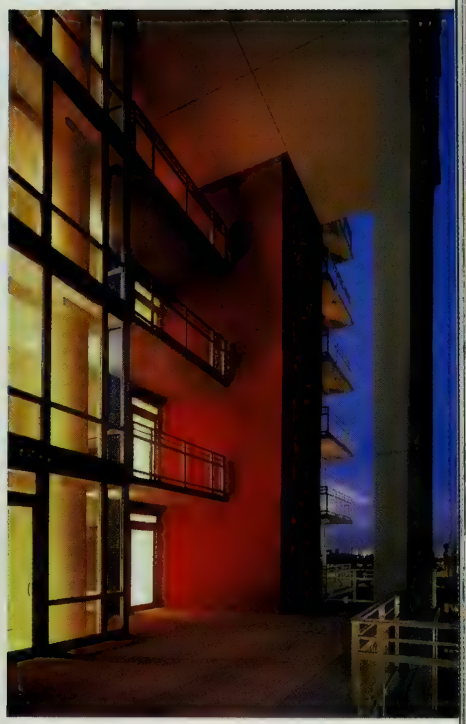
Project: *Skybridge at One North Halsted, Chicago*
Owner: *Moran Associates/Dearborn Development*
Architect: *Perkins & Will—Ralph Johnson, FAIA, design principal; Terrance Owens, AIA, G. William Doerge, managing principals; Fereidoon Afshari, AIA, technical principal; Curt Behnke, senior designer; Ken Soch, Bryan Schabel, Raymond Coleman, Monica Oller, Aimee Mosesson, Malaika Corsentino, Rick Reindel, Jim Skalla, Jack Bransfield, project team*
Engineers: *Samartano (structural); WMA Consulting Engineers (m/e/p, fire protection); Wolff Clements (landscape); Eriksson Engineering (civil)*
Construction manager: *Ameri-con Enterprises Services*
General contractor: *Walsh Construction*



1. *Duplex apartment*
2. *One-bedroom apartment*
3. *Two-bedroom apartment*
4. *Three-bedroom apartment*









The building addresses North Halsted Street with a retail and parking wing (below and above left). Every unit has a balcony or terrace (above right).





of the building can still catch glimpses of the downtown skyline. The architects also had to drop the idea of a solid roof plane, after studies showed that pressure from wind uplift would have been too great. So Johnson turned the roof plane into a steel trellis but kept the strong horizontal edge that gives the building a distinctive top.

Another strength of Johnson's scheme was the flexibility it offered in terms of combining dwelling units. By putting different size apartments next to each other—rather than segregating large ones from small ones—the floor plans accommodate many unit combinations and permutations. As it turned out, such flexibility was a big help in dealing with a market made skittish by the events of 9/11 and a sluggish economy. Originally planned to have 237 residences, the building will end up with about 200 after buyers combine units, reports Weiner. The apartments range from 950-square-foot, one-bedroom residences selling for $270,000

"I FELT WE COULD PUSH THE ENVELOPE WITH THIS BUILDING," THE DEVELOPER SAYS. "CHICAGO HAD GOTTEN INTO A RUT."

to a 4,000-square-foot penthouse for $1.6 million. City authorities had pushed the developer to include a number of three-bedroom apartments, hoping to bring families to the downtown area. Weiner reports, though, that these units have not sold well, because buyers have tended to be either empty-nesters or young couples.

Although designed to be seen from a distance, Skybridge also works hard to fit into its neighborhood. At the base of its west elevation, the building addresses North Halsted Street with a long, four-story structure housing a Dominick's supermarket and other retail outlets on the ground level and three levels of parking above. Translucent colored-glass panels screening the parking levels and a crisp, concrete frame echoing the design vocabulary of the tower help create an engaging urban anchor for the project. The architects slipped additional parking below grade and into a structure on the east side of the base, facing the expressway.

To carve multistory voids from the mass of the building and create the project's distinctive 25-story-tall glass slot required some structural gymnastics, but nothing outrageous. Concrete columns 30 inches in diameter and concrete shear walls (mostly perpendicular to the length of the building) serve as the key members of the structural system, supplemented by the vertical circulation cores in the two towers. At the top of the building, upturned structural beams help tie the towers together. By pulling columns inside the apartments, the architects maximized the use of glass wrapping around the building. As a result, most of the building's perimeter offers floor-to-ceiling glazing and many units have glazed corners. Every apartment has its own outdoor space, either a balcony or terrace, some of which are quite generous in size. While the building's fancy structural system cost more than a conventional design would have, it also creates more corner units, which sell for more. "The difference between innovative architecture and standard design is 5 to 10 percent of construction costs," says Weiner. "If you can't handle that, then don't take on a project like this."

To keep costs down, the architects used painted concrete for the exterior of the building and simple materials such as maple paneling and ceramic floor tiles in the small, two-story lobby.

"The developer took a risk with this project," says Curt Behnke, the senior designer on Johnson's team. "It's a different kind of building for the city," he adds. A year after the building opened, about 65 percent of the units have sold, says Weiner. Although the developer has had projects that sold faster, he is quite proud of Skybridge: "Twenty years from now, this will be one of Chicago's landmarks." ■

Sources

Painted concrete: *M.A.B. Modac*

Anodized aluminum curtain wall: *Vista Wall*

Anodized aluminum windows: *Traco*

Insulating low-e glazing: *AFGD*

Color ceramic-frit glazing on garage: *Viracon*

For more information on this project, go to Projects at **www.architecturalrecord.com.**





The building's namesake bridge offers views east and west (below). Bringing structural columns inside allowed glass to wrap around units (above and opposite, right). The lobby is small but tall (opposite, left).

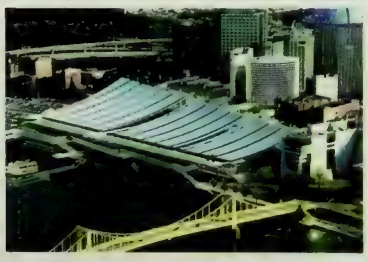


Top to bottom
1. Florida Hospital Waterman
2. Cohen Stadium
3. David L. Lawrence Convention Center

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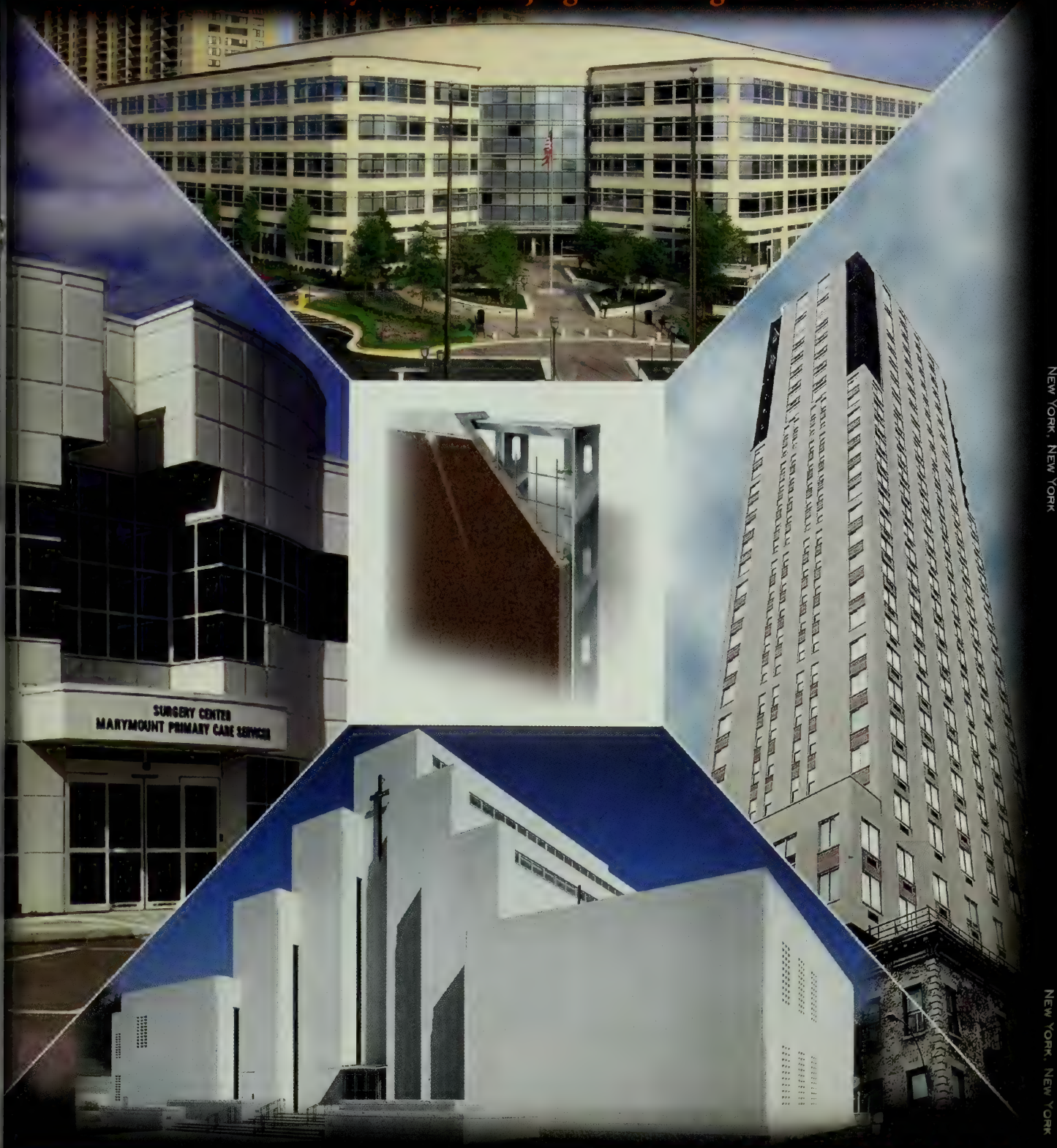
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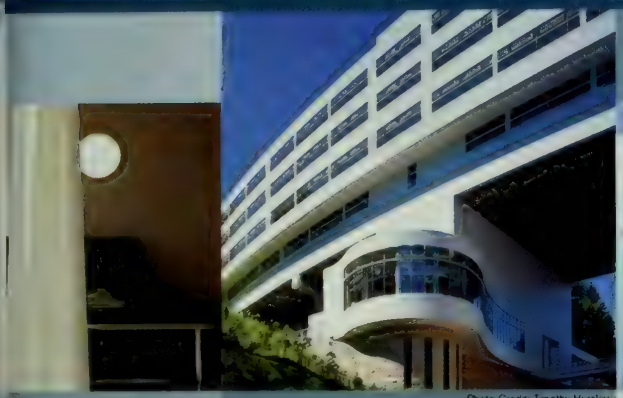


Photo Credit: Timothy Hursley



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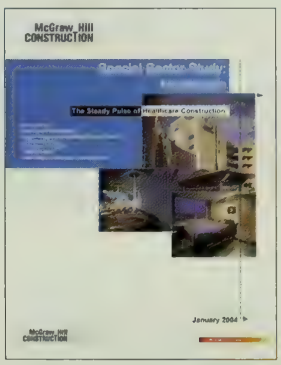
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CONVENTION CENTERS

Civic Pride

THE LATEST GENERATION OF CONVENTION CENTERS REVEALS A BUILDING TYPE THAT HAS EVOLVED FROM EYESORE TO ICON.

By Sara Hart

One need only stand in the middle of Mount Vernon Square in Washington, D.C., and observe the juxtaposition of the capital's new convention center to the north and its predecessor a few hundred yards to the south to witness a paradigm shift in design. The former is a welcoming structure of transparency and elegance, the latter an ominous concrete tomb that suggests spectators go in, but they don't come out. The old convention center is a relic of the 1970s when developers of large, public venues were satisfied with blank containers that turned their backs on the cities that hosted them. The rationale for this was that exhibitors wanted black boxes in which they could create their own theatrics without daylight's intrusive reality check. The result was an experience not unlike a Las Vegas casino: no clocks, no sense of day or night, no external distractions.

Las Vegas hasn't fixed what in its case isn't broken, but developers of convention centers and similar building types—sports arenas and even shopping malls—are confronting new economic realities, not the least of which is increased competition for business. Every second-tier city from Raleigh, North Carolina, to Worcester, Massachusetts, is building such facilities, the theory being that their by-products—hotels, restaurants, and retail operations—will revitalize depressed urban areas or deliver architectural distinction to a bland context. To gain advantage in this competitive environment, city officials and private developers promote their projects as having unique amenities that will benefit the local residents as well as visitors. Then they chose architects who can produce the visual drama to make these behemoths desirable destinations.

In all three projects discussed here, functionality in the exhibition halls remains an elemental priority. Regardless of the civic pride at stake, these halls are the financial nucleus of any convention center. Paradoxically, all three firms used transparency to hide these sealed internal containers. At the same time, transparency penetrates the massing and diminishes the bulk associated with this building type. Visitors remain connected to the outside world, and passersby are treated vicariously to the activities taking place inside.

Besides finely detailed curtain walls and soaring, light-filled atriums, the architects of each project succeeded in turning secondary spaces, clumsily referred to as "prefunction" areas, into destinations in their own right, deserving of another label. Here, the collaboration between architect and interior designer was crucial. In all three cases, the partnership paid off to the extent that these supersize volumes might actually be called glamorous. Another fabulous paradox. ■



1.

Washington, D.C.

Thompson, Ventulett, Stainback disprove conventional wisdom by elegantly reconciling building mass and residential scale.



2.

Pittsburgh

Rafael Viñoly applies sustainable principles on a large scale with an iconic beacon on the banks of the Allegheny River.



3.

San Francisco

In a joint venture, Gensler lifts the Moscone Center out of the ground with a sparkling addition.

For more information on these projects, go to Projects at **www.architecturalrecord.com**.

Washington Convention Center
Washington, D.C.

THOMPSON, VENTULETT, STAINBACK & ASSOCIATES HAS GIVEN THE U.S. CAPITAL A NEW CONVENTION CENTER AND THE NATION A TOWN HALL.

By Sara Hart

Architect: *Thompson, Ventulett, Stainback & Associates—Thomas W. Ventulett, FAIA, C. Andrew McLean, FAIA, R. Scott Sickeler, AIA, Liz Neiswander, AIA, Ken Stockdell, Jr., AIA, Mike Hagen, AIA, Kevin Gordon, AIA, Mike Azumi, AIA, Peter Green, AIA, Scott Morris, AIA*
Architect of record: *Mariani Architects Engineers*
Associate architect: *Deveroux & Parnell*
Client: *Washington Convention Center Authority*
Consultants: *James Madison Cutts, Mueser Rutledge Consulting Engineers, Ross Bryan Associates, Daniels and Associates (structural); Lee & Liu Associates (landscape); TVS Interiors (interior design)*
General contractor: *Clark/Smoot, Joint Venture*

Size: *2,300,000 square feet*
Cost: *Not available*
Completion date: *March 2003*

Sources
Curtain wall: *Advanced Structures; Kawneer*
Masonry: *Tyndal Brick*
Operable partitions: *Modernfold*
Elevators/escalators: *Fujitech America*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

Contemporary Washington architecture is, as a rule, uninspiring. Because of the city's well-known and much-groused-about height restrictions, as well as its deference to L'Enfant's 1791 plan, developers have been forced to fill the allowable envelope of every site, often with mediocre results. Modernist bulk—frequently rendered in a Classical pastiche of stone or brick veneer—rules the blocks of downtown.

Enter Atlanta-based Thompson, Ventulett, Stainback & Associates (TVS) to challenge conventional wisdom. Although a diverse practice, TVS is best known for designing some of the most carefully crafted convention centers in 34 U.S. cities. Chicago's McCormick Place and the Pennsylvania Convention Center in Philadelphia set the standard for this building type and, as a result, they have received the highest honors from the American Institute of Architects. With its experience and expertise, TVS was the logical choice to design a landmark for Washington in the form of a convention center. Ten years in the making, including an approval process that required review by more than a hundred local and federal agencies, TVS has shown through perseverance and talent that stringent regulations need not preclude exceptional design.

Program

By definition, convention centers are enormous structures, but TVS was faced with layers of complexity, including 700,000 square feet of exhibition space, a 230,000-square-foot assembly hall, 70 meeting rooms, and a ballroom with banquet seating for 3,000.



The task was further complicated by location. The six-block site is situated in a residential and light-commercial neighborhood with underrealized economic potential in sight of the Capitol dome and minutes from Union Station. Ambitious plans to develop a seemingly vulnerable neighborhood attracted serious scrutiny from numerous interested parties and, in this case, highly politicized ones. At the same time, the city had a desire to construct a high-profile symbol of prosperity and democratic ideals in uncertain times. Finally, TVS was charged with creating not just a commercial venue and tourist destination, but a new monument in a city whose identity is defined by large public monuments.

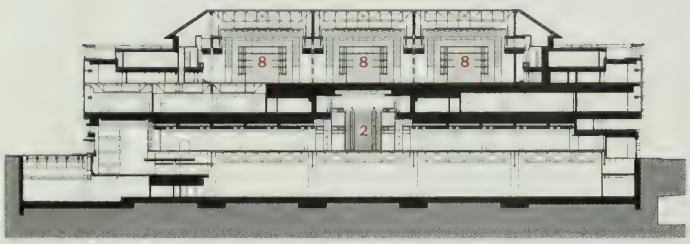
Commentary

A checklist of well-executed features doesn't begin to describe the architectural achievements of this project: Functionality and security are invisible; way-finding is intuitive; interior design blends seamlessly with the architecture; scale and proportion, the fundamental principles of architecture, are handled with authority and boldness. Initially, there was the problem of scale, as the complex is enormous. The architects realized that the only way to keep it manageable was to place two thirds of the program below grade. Of course, this required the removal of two million tons of earth.

And yet, boldness is balanced by respect and a well-researched understanding of the area. For instance, the



TVS solidly anchored the corner at Mount Vernon and 7th Streets with solid piers supporting transparent gathering spaces with views of the skyline. The convention center mixes well visually with the old Beaux-Arts Carnegie Library across the street (opposite).

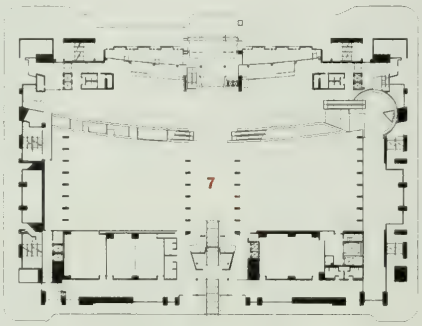


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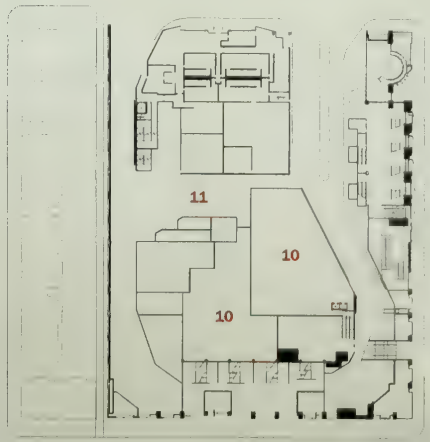
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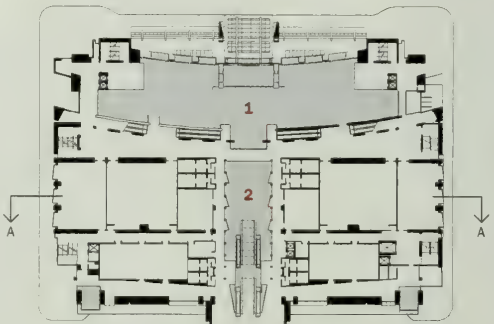
1. *Grand lobby*
2. *8th Street concourse*
3. *8th Street bridge*
4. *Assembly hall*
5. *Service area*
6. *Truck docks*
7. *Registration*
8. *Junior ballroom*
9. *Meeting rooms*
10. *Central plant*
11. *Service drive*



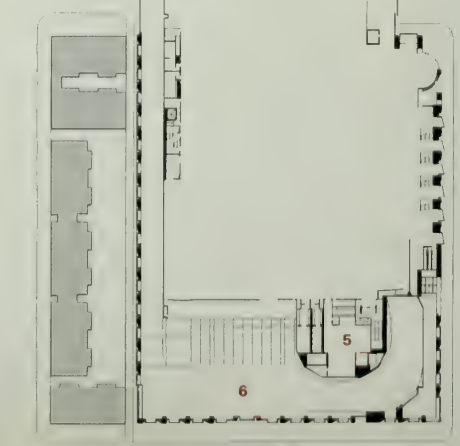




THIRD FLOOR







MAIN FLOOR

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9 M.



Monumental pylons (this page) anchor the entry facade and allude to the continuation of 8th Street, which was part of L'Enfant's original plan. TVS modulated the west elevation (opposite) as it marches into a residentially scaled area.



Skylights flood the main lobby with light (this page). One of two monumental staircases leads to the second level. A ramp and escalator are discreetly positioned behind the row of columns to the right of the stair. The architects opened the interior planes (opposite, top two) to provide orienting views through the spaces.

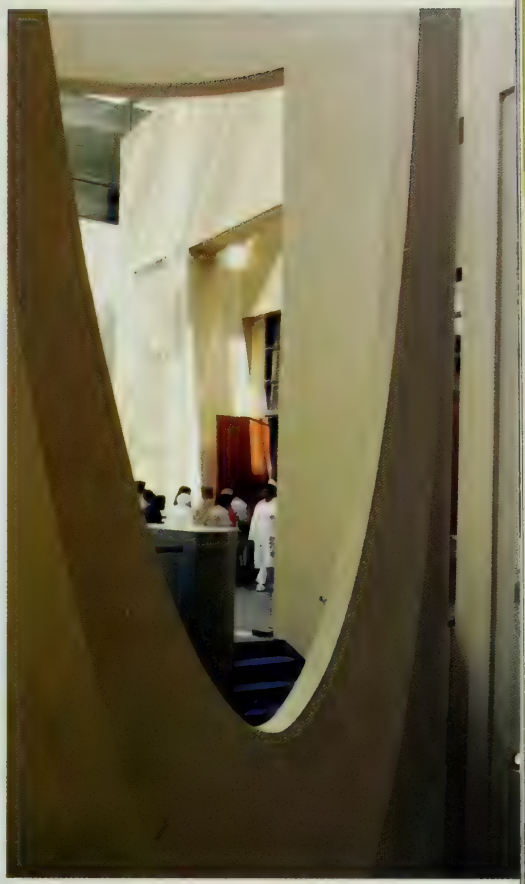
main entrance on the north side of Mount Vernon Square looks at the City Museum of Washington (formerly the Carnegie Library), a much smaller, Beaux-Arts gem, completed in 1902 and still commanding a stately presence in the square. The architects acknowledged its eminence by centering the new building's main lobby on axis with the museum and mirroring its symmetry. Massive stair towers at the corners match the museum's limestone cladding.

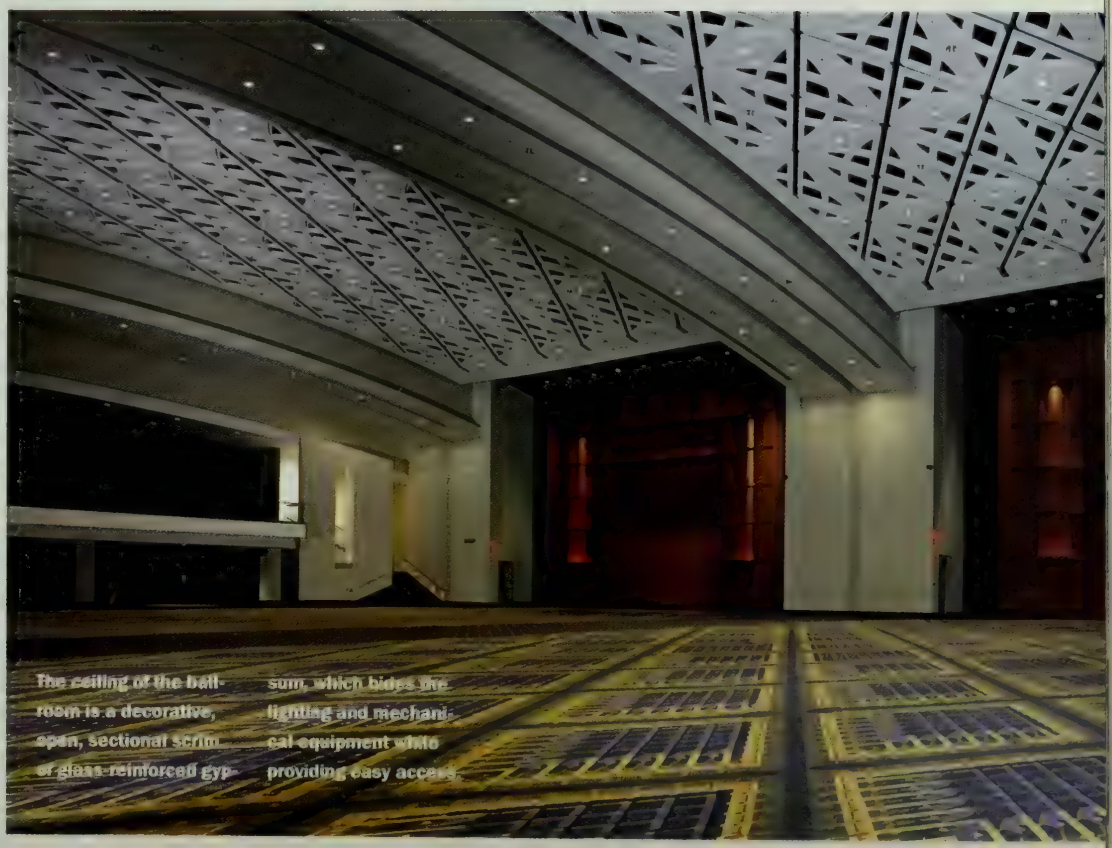
The architects modulated and scaled-down the facades as they advance along three large blocks north into the heart of the neighborhood. Limestone gives way to precast concrete, which then turns to an off-white brick, which respects the materials and scale of the neighborhood while maintaining the language of the complex. It's a subtle and effective transition. As a result, there is no architecturally inferior back side to the complex. Retail spaces and secondary entrances circumscribe the envelope. Seventy loading docks are buried within the building with access from cross streets, which break the mass into three distinct structures at grade with pedestrian bridges above that connect the components.

TVS's fastidious attention to proportion continues inside. Often when the architecture and interior design are developed independently, the two efforts compete. This shortfall was avoided, because TVS and its equal sibling, TVS Interiors, collaborated from the first day. A grid of reveals and changes in material creates a hierarchy of details.

Furthermore, TVS has saved the monumental staircase from extinction. Ceremonial procession is the hallmark of grandeur, and in many large civic projects, the stair has been supplanted by the efficient and economical escalator. Two grand staircases lead, rather than herd, visitors through the public spaces. While flanked by apparently obligatory escalators, the staircases are the prevailing architectural element, beacons in the vastness of the interior. As the architects know, when everything else is equal, it's the experience that counts. ■







The ceiling of the ballroom is a decorative, open, sectional scrim of glass-reinforced gypsum, which hides the lighting and mechanical equipment while providing easy access.

David L. Lawrence Convention Center
Pittsburgh

2

RAFAEL VIÑOLY ARCHITECTS' BRIDGELIKE STRUCTURE ON THE WATERFRONT REAPS ACCOLADES FOR ENERGY EFFICIENCY AND ENGINEERING INGENUITY.

By Deborah Snoonian, P.E.

Architect: *Rafael Viñoly Architects—Rafael Viñoly, FAIA, principal in charge; Jay Bargmann, AIA, project director; David Rolland, AIA, project manager; Charles Blomberg, AIA, Francesco De Fuentes, Tomomi Hayashi, Patrick Hwang, Julian Kinal, Edward La!.onde, Keisuke Nibe, Felipe Nistal, Aki Shimiz, design team*
Client: *Sports and Exhibition Authority, Pittsburgh*
Engineers: *Dewhurst Macfarlane and Partners/Goldreich Engineering (structural); Burt Hill Kosar Rittelman (m/e/p, fire protection)*
Consultants: *LAM Partners (lighting); Shen Milsom Wilke (A/V, telecom, acoustics); Chilton Engineering (civil engineering); Crystal Fountains (water feature)*

Size: *1.45 million square feet*
Cost: *$294 million*
Completion date: *September 2003*

Sources
Structural system: *ADF (steel); Birdair (cable roof system)*
Cladding: *AJAY (glass curtain wall); Alucobond (metal panels); Centria (corrugated metal panels); Overly Manufacturing (stainless-steel roofing); Birdair (tensile fabric membrane)*
Louvers: *Construction Specialties*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

Longtime residents of Steel City remember the days when white-collar businessmen changed their shirts each afternoon after airborne soot had dirtied the ones they'd worn in the morning. But Pittsburgh has cleaned up its act since its flagship industry dried up, and city officials have embraced the tenets of green building. The new David L. Lawrence Convention Center embodies the aspirations of a city reinvigorating its downtown core as it strives to craft an identity around its universities and new industries in the medical and high-tech fields.

Program

In 1998, the Sports and Exhibition Authority announced a competition for an addition to an undersize convention center on the south shore of the Allegheny River. The program, conceived by local officials, required firms to incorporate sustainability strategies into their schemes. A nine-member jury winnowed through hundreds of entries to pick four finalists, and in February 1999, the jury announced the unanimous selection of Rafael Viñoly Architects over Arquitectonica, Cesar Pelli & Associates, and Skidmore, Owings & Merrill. An aura of high-stakes drama surrounded the contest, with local newspapers devoting many column-inches to its progression, all capped off by a television special that chronicled the evolution of each finalist's design.

Solution

Clad mostly in heat-reflecting white aluminum, the new center stands out brightly against the dense concrete-and-brick palette of downtown. Its north elevation faces the river, and from the opposite shore it resembles nothing so much as a cruise ship ready to set sail for exotic waters. But seen up close, the structure reveals itself as what Viñoly calls "half a bridge"—a nod to the city's engineering heritage. The north side is cantilevered like a deck over the roadway below. Fifteen enormous cables, strung over tall masts, support the sloping roof. The cables terminate in exposed anchors inside and on the roof, where passersby inspect them like rare sculptures.

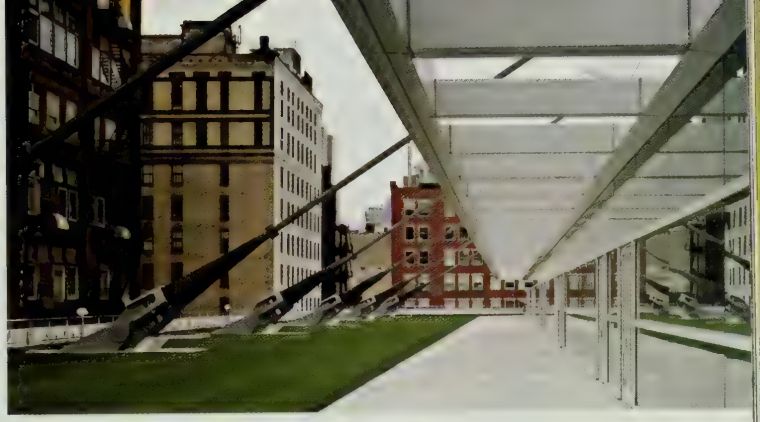
To the usual programmatic mix, Viñoly has introduced extensive glazing, river views, and outdoor terraces, bringing daylight and fresh air to what has historically been a sealed-off building type. These features, among others, earned the project a gold LEED rating from the U.S. Green Building Council last year. It's expected to consume a third less energy than comparable structures.

Visitors gain access on the ground floor alongside a bus-and-shuttle underpass, which is bisected by a man-made stream pumped from the subsurface aquifer that connects the building to its site (a riverfront park is in the works). Modest-size exhibition halls occupy the west end



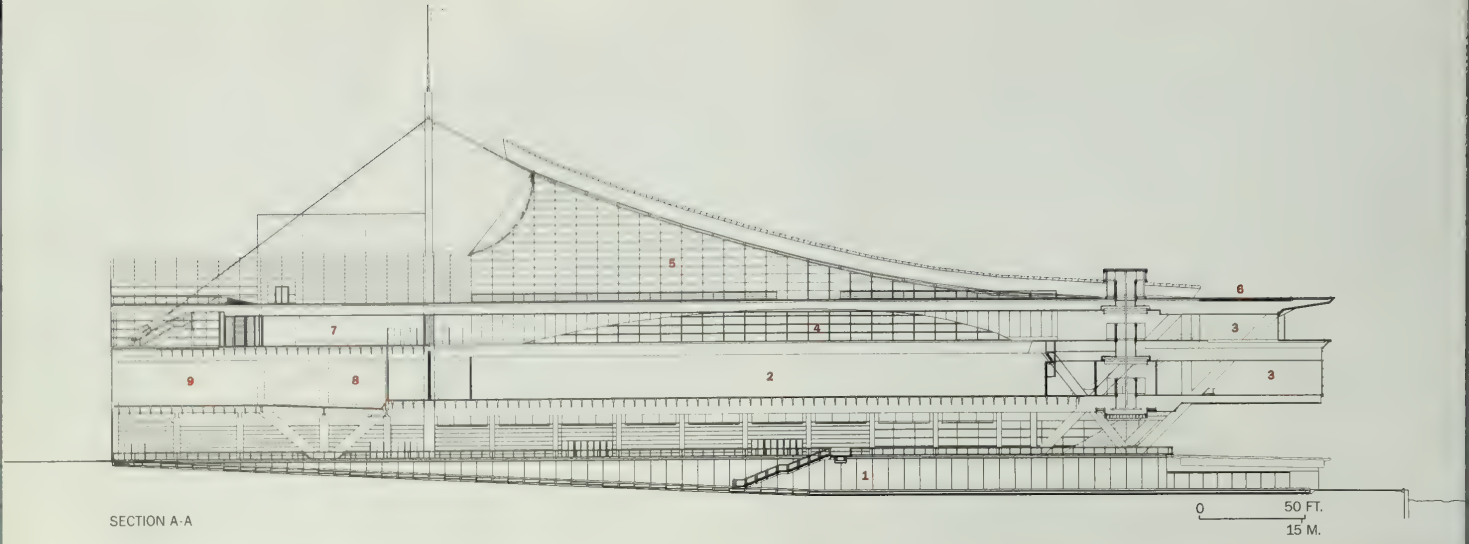
PHOTOGRAPHY: © BRAD FEINKNOPF, EXCEPT AS NOTED; ROMÁN VIÑOLY (OPPOSITE, TOP LEFT)



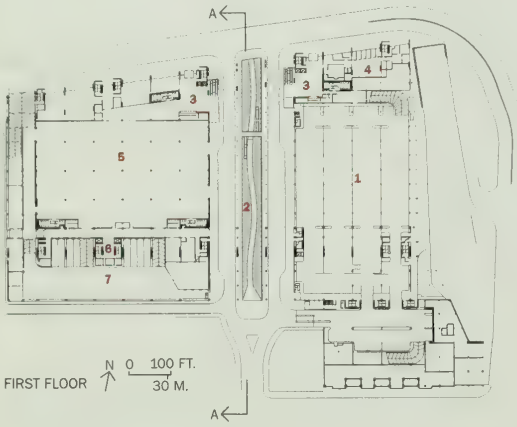


The sweeping form of the David L. Lawrence Convention Center (below) pays homage to the Three Sisters, the yellow-painted steel suspension bridges that span the Allegheny River (left). On the roof, huge supporting cables terminate in exposed anchors like those found on the bridges (above).

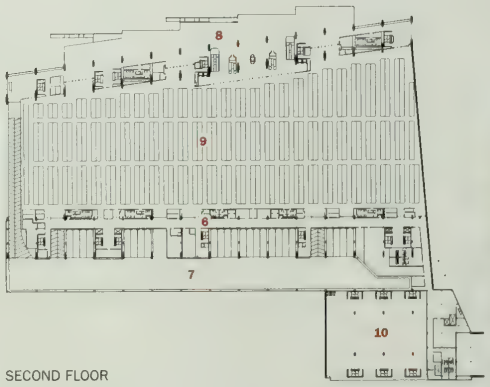




1. *Water feature*
2. *Main exhibition hall*
3. *Prefunction area*
4. *Pedestrian bridge*
5. *Promenade*
6. *Riverfront terrace*
7. *Entry lobby*
8. *Service corridor*
9. *Loading dock*



FIRST FLOOR



SECOND FLOOR

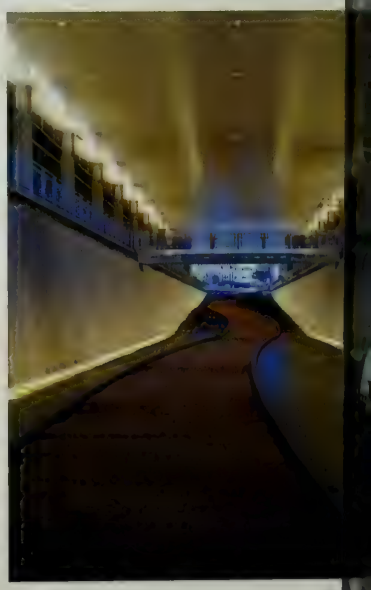


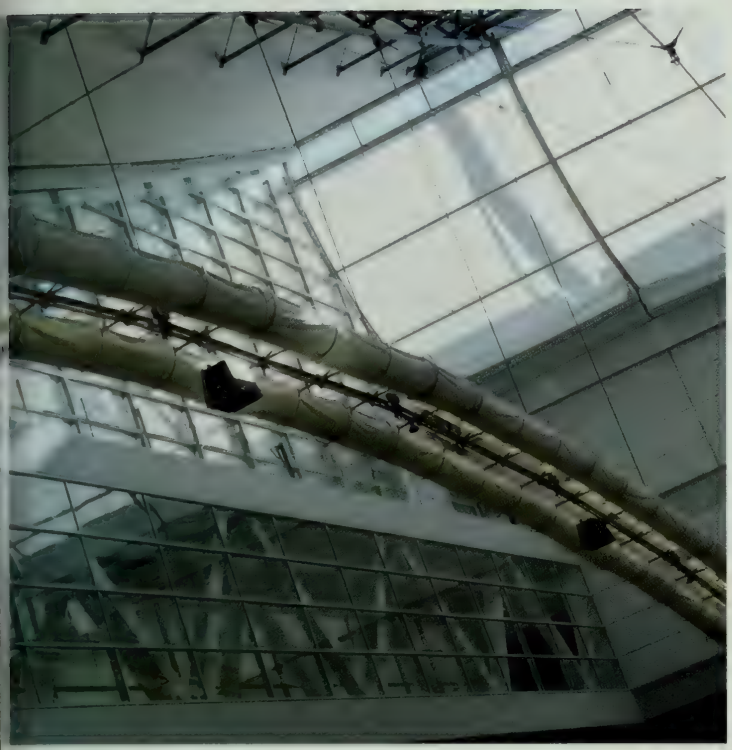


THIRD FLOOR

1. *Parking garage*
2. *Water feature*
3. *Entry lobby*
4. *Administration*
5. *Secondary exhibition hall*
6. *Service corridor*
7. *Loading dock*
8. *Prefunction area*
9. *Main exhibition hall*
10. *Junior ballroom (for future hotel)*
11. *Meeting room*
12. *Pedestrian bridge*
13. *Service bridge*
14. *Main ballroom*
15. *Kitchen*

A rooftop deck allows views of downtown Pittsburgh (above right). At the ground-floor level, water flows over concrete walls into a channel that points the way to a planned riverfront park (right).







The play of sunlight and shadow animates the roof of the main exhibition hall and a circulation area (above left and right). Ample glazing opens up river views on the north side (below).





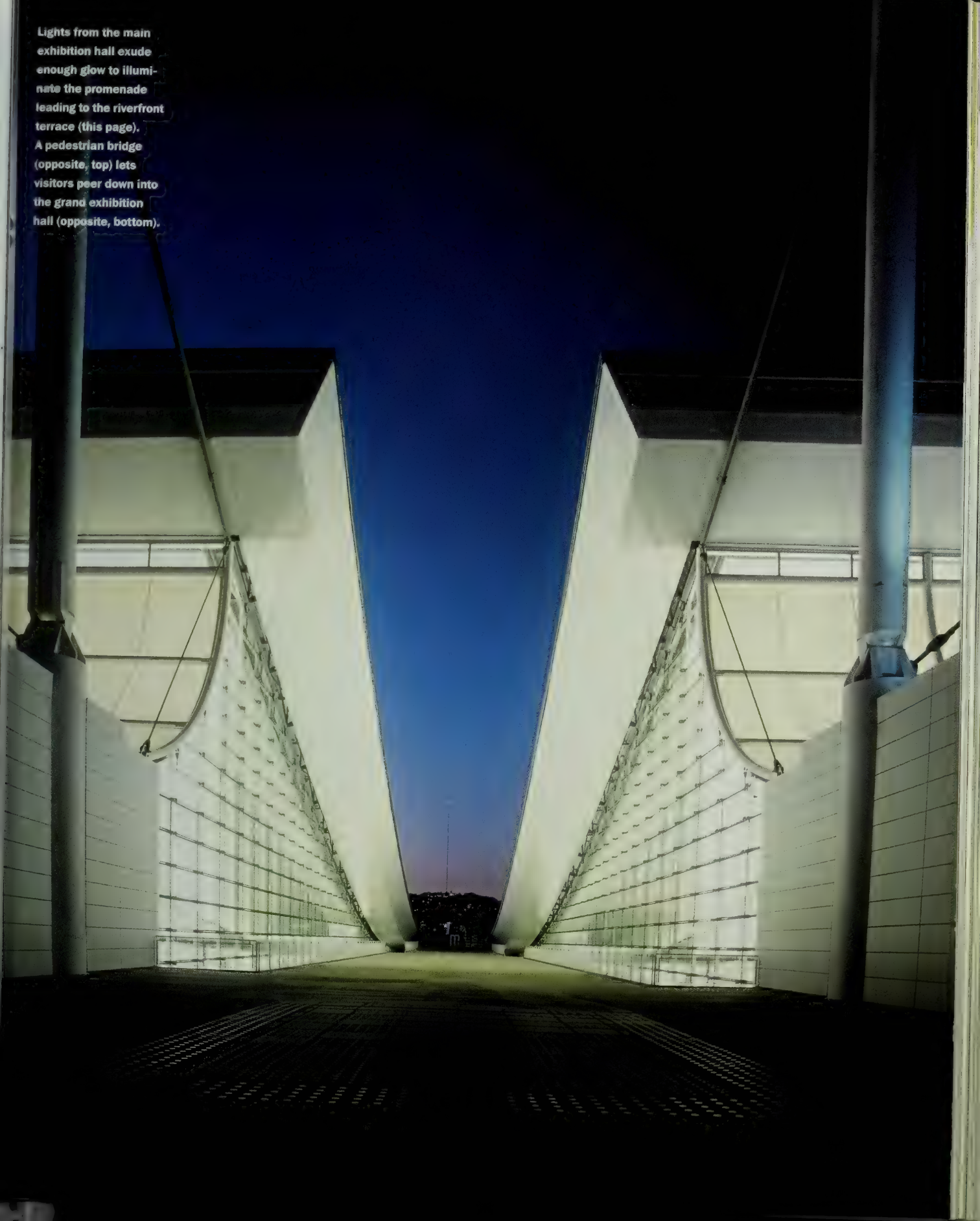
of this floor, with administrative offices located to the east.

On the second floor, nary a single column impedes the expanse of the main exhibition hall—clearly the grand achievement of this project. During temperate months, fresh air cools the volume, introduced through louvers on the north and south sides. A glazed walkway that crosses over the hall puts visitors at eye level with the cable-and-truss-supported roof. Viñoly wanted to maintain its airy feel, so engineers Burt Hill Kosar Rittelmann designed a system of fabric ducts with irregular perforations along their length that ensure air enters the hall with a stable flow and velocity, key for thermal comfort. According to David Linamen, the engineer in charge, the ducts easily accommodate structural shifts in the roof and were cheaper to install than metal ductwork, as well as less prone to condensation problems with the energy-efficient low-temperature HVAC system.

Between appointments, visitors can enjoy river views on the second and third floors. In warm weather, the rooftop deck and promenade afford vistas of downtown as well as the bridges and hills that inspired the building's form. Meeting rooms and circulation areas present a calm backdrop to the constant thrum of human activity with their pure-white walls and interior finishes in quiet tones of beige, gray, and burgundy.

Commentary

Viñoly correctly says the project "is not fashionable," but that doesn't mean it lacks flair: The center's superb unity of siting, structure, form, and material make it a fitting new icon for its host city. Recognizing a community in need of a destination that could support urban life for many years to come, Viñoly eschewed flash-in-the-pan architectural brio for a sophisticated solution that's high on refined elegance yet absent empty flourish or needless sculptural gesture. In so choosing, he has done Pittsburgh a great service. Fashion may be fleeting, but style is timeless. ■



Lights from the main exhibition hall exude enough glow to illuminate the promenade leading to the riverfront terrace (this page). A pedestrian bridge (opposite, top) lets visitors peer down into the grand exhibition hall (opposite, bottom).

Moscone West
San Francisco

3 **IN A JOINT VENTURE, GENSLER ENSURES PROSPERITY FOR THE MOSCONE CENTER WITH A RADIANT AND PROMINENT ADDITION.**

By Barbara Knecht

Architect: *A joint venture of Gensler (design architect and joint venture manager), Michael Willis Architects (core and shell), and Kwan Henmi Architecture (interiors)*
Client: *City and County of San Francisco Convention Facilities Department*
Engineers: *Structural Design Engineers (structural); Ajmani & Pamidi, San Francisco (mechanical); Farber Energy Design (Title 24); The Engineering Enterprise (electrical)*
Consultants: *Patricia O'Brien Landscape Architects (landscaping); JS Nolan + Associates (lighting); Shen Milsom & Wilke/Paoletti (acoustics)*
Contractor: *Hunt Construction*

Size: *774,000 square feet (gross)*
Cost: *$182.1 million*
Completion date: *June 2003*

Sources
Low-e glass: *Viracom*
Curtain wall: *Enclos*
Concrete: *Clark Pacific*
Demountable partitions: *Advanced Equipment*
Resilient flooring: *Armstrong*
Carpet: *Collins & Aikman*
Elevators/escalators: *Thyssen Krupp*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

San Francisco's Moscone West does not follow the rules. Eschewing the black-box formula, Moscone West is a daylight-filled building that rises 110 feet on a crowded downtown street. It defies all the old rules of convention centers and yet has bookings 20 years out.

The original Moscone Convention Center (now Moscone South) opened in 1981 in an area south of Market Street, which was then considered the city's outskirts. As a single-story, windowless, underground hall with an automobile-friendly entrance, it followed all the rules. So did the first addition, Moscone North, which opened in 1992. Virtually all of it, including the passage under Howard Street that connects it to the original building, is below grade. Moscone proved the formula works by becoming one of the busiest centers for medium-size conventions in the country.

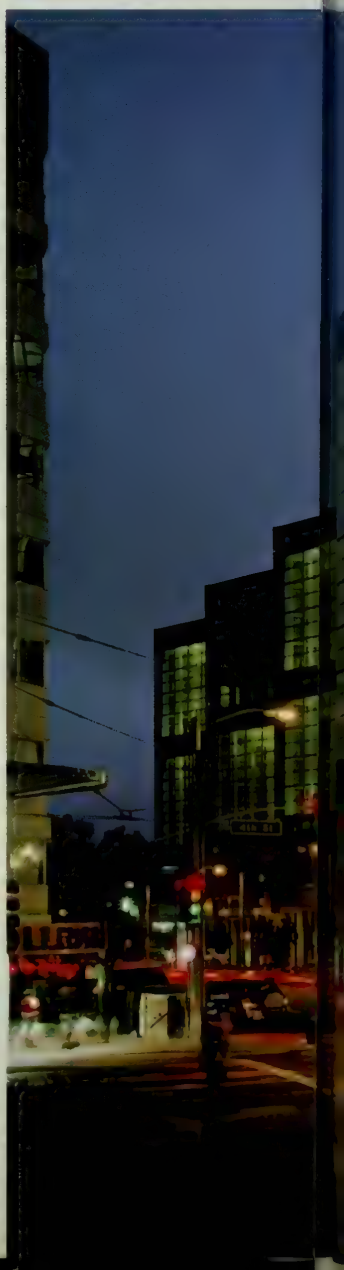
Program

By the mid-1990s, when the city needed to expand again, the neighborhood had become Yerba Buena Center, a vibrant cultural extension of downtown San Francisco, where land is scarce and expensive. To remain competitive, Moscone needed an adjacent site so that the entire complex could function as a single venue. The program called for a 45 percent increase in net usable area. The only suitable site, on a block to the west of Moscone North across Fourth Street, was 189,000 square feet, little more than 20 percent of the combined area of the two existing sites, but expected to add 45 percent to the net usable capacity.

Solution

"We were confronted, on a highly visible site, with the conundrum of convention centers: public buildings that are not open to the public. Fourth Street is a major pedestrian corridor from downtown to the entire Yerba Buena area, and Howard Street is a major vehicle corridor," explained Kevin Hart, design principal for Gensler, the lead architect. "Moscone conventions average higher attendance because people want to come to San Francisco, and yet attendees have no interaction with the city during convention hours. The idea was to make the building as transparent as possible, to allow the public to see what is going on, to enliven the street, and to give the visitors a connection to the city."

Moscone West has its black-box interior that can be controlled and manipulated for exhibitions and presentations, but it is wrapped on its two public street sides with glass-enclosed spaces that offer conventiongoers daylight and city views, and even a terrace on which to step outside over Fourth Street. Passersby can see movement and activity through the glass curtain walls to three levels of 27,000-square-foot prefunction rooms along



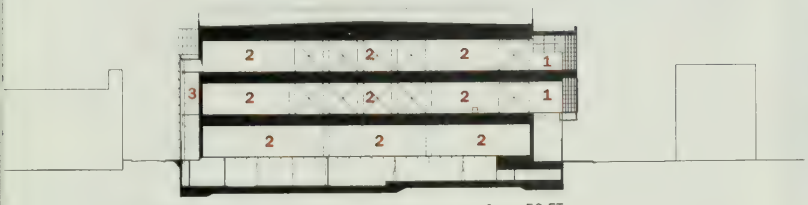
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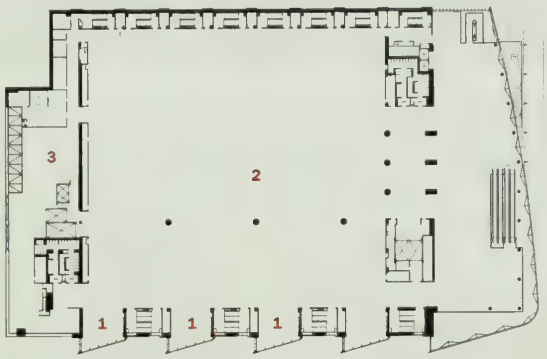
The center's transparent facades are glazed with high-performance glass, which is coated with ceramic frit above 8 feet to reduce glare and control heat gain. The curved corner focuses to the southeast and orients visitors to the rest of the complex.

1. *Prefunction and breakout*
2. *Meeting and exhibition*
3. *Service and egress*

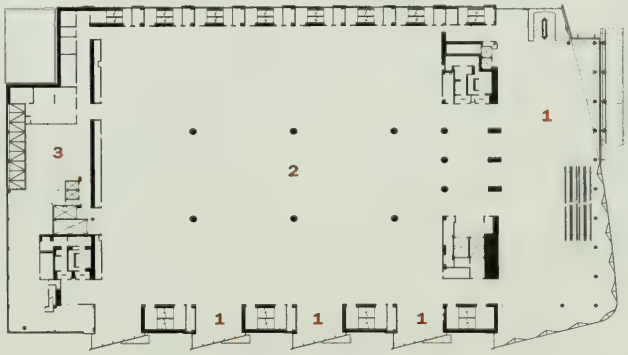


SECTION A-A

0 50 FT.
15 M.



SECOND FLOOR



THIRD FLOOR

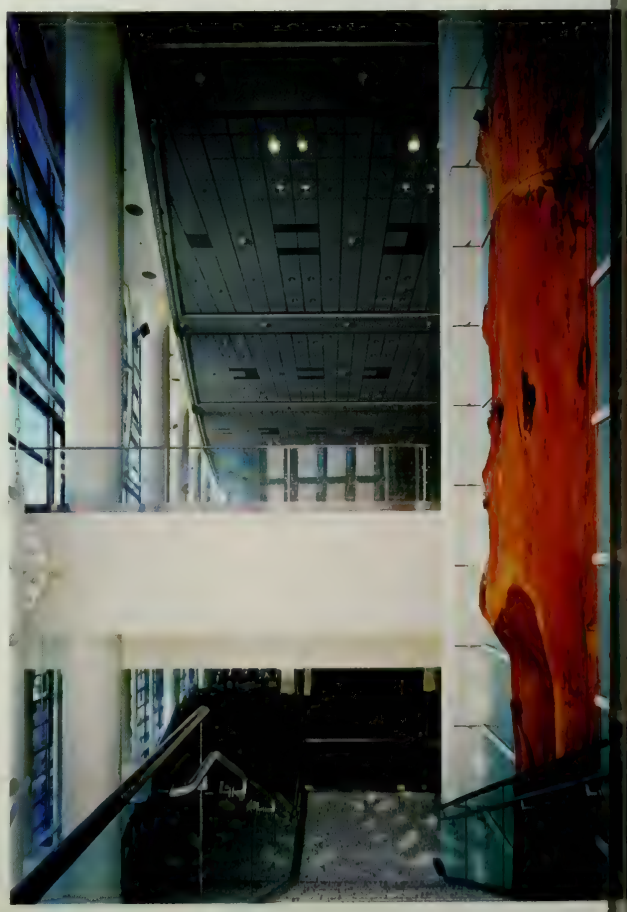


FIRST FLOOR

N 0 50 FT.
15 M.

Tree **(bottom) is a redwood sculpture by Hilda Shum, Wang Po Shu, and David Gordon and is part of the city's Public Art Program. The entrance to the meeting areas (below) is finished in gold quartzite.**









A grand staircase leads visitors from the main lobby to prefunction spaces on the next floor.

Fourth Street, and storefronts topped by two levels of multifunctional spaces in bays along Howard Street.

Flexibility is integrated throughout the building. The black-box interior is reconfigured using 5-foot-wide-by-27-foot-high ceiling-hung panels that can be moved by a single individual. They are stored in cabinets adjacent to exit stairs along the south facade on the second and third floors. They move along a track in a prearranged pattern that can create up to 19 meeting rooms per floor. Between the exit stairs and partition cabinets are light-filled multifunction rooms for informal meetings or breaks. These elements create the a scale-moderating rhythm along the south facade.

Commentary

At 774,000 square feet, it is the littlest Moscone, but this is not a small building. With facade lengths of 320 to 500 feet and three stories with floor-to-floor heights of 37½ feet, the building had the potential to loom over this mostly low-lying district. Instead, several scale-mediating measures reduce the perception of its size and create a new pedestrian-friendly face for the entire complex. The projecting mass that follows the street grid is compatible with the adjacent building.

According to Julie Burford, the assistant general manager, "Moscone West has become the public face of the entire center. Pedestrians instinctively stop here to orient themselves; convention organizers are using the three lobbies for every use from general registration to social functions. They are the largest such spaces in the complex, and they are rapidly becoming the most popular." She noted that flexibility was critical to Moscone's market competitiveness. Operations are designed to make space-configuration changes rapidly and with the least amount of labor. The architects put together the elements to make a downtown convention center spreading across three blocks work. It is pedestrian-friendly in a walking city. It has an urban scale without compromising the qualities that exhibitors seek. ■

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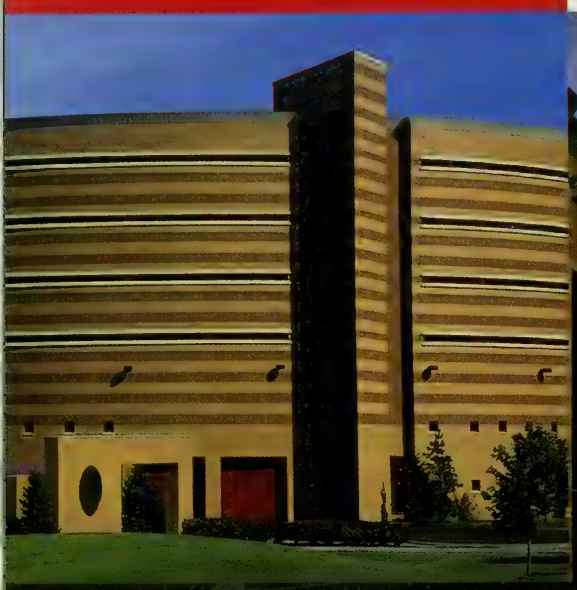
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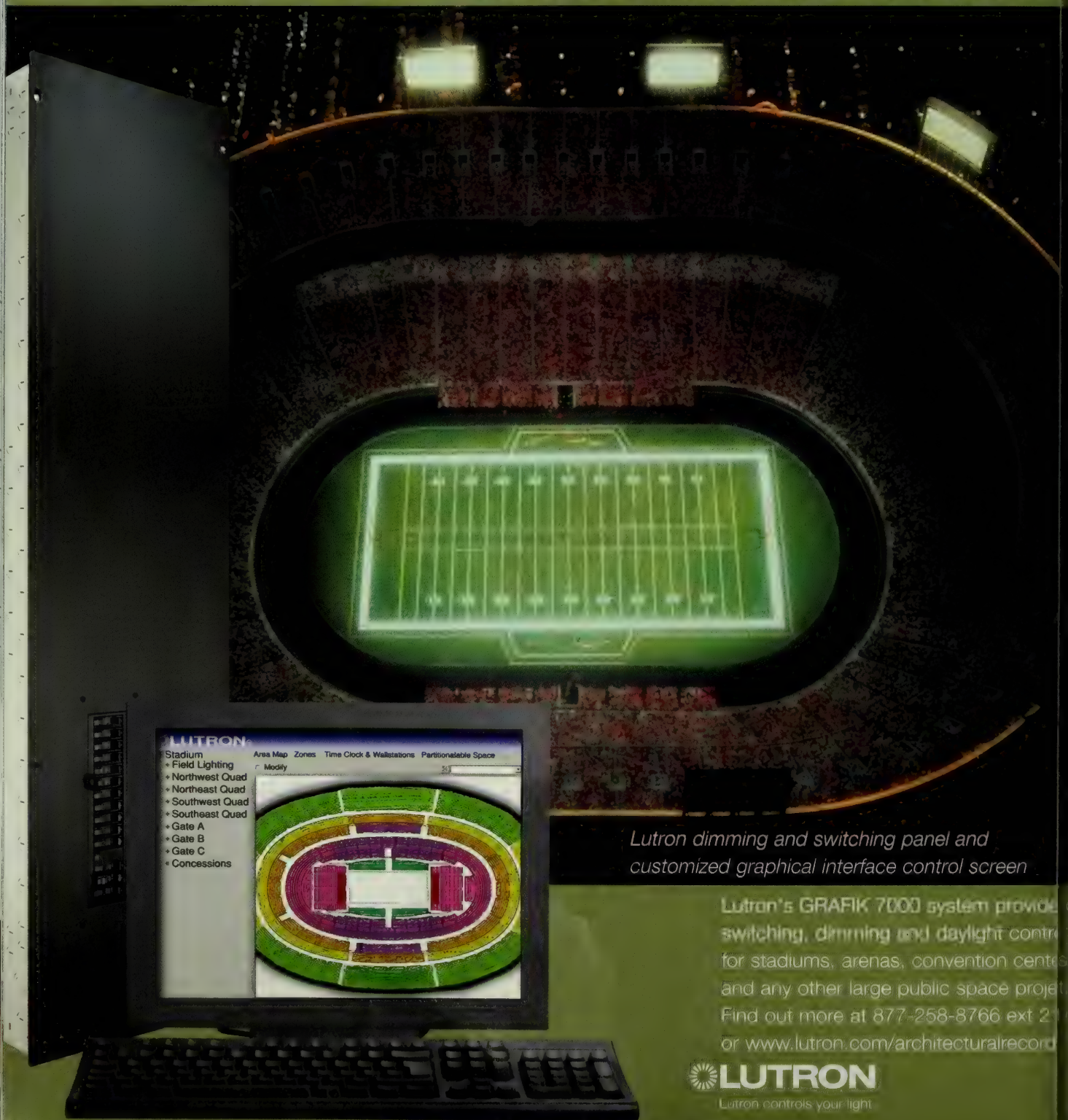
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Alternative Energy Sources

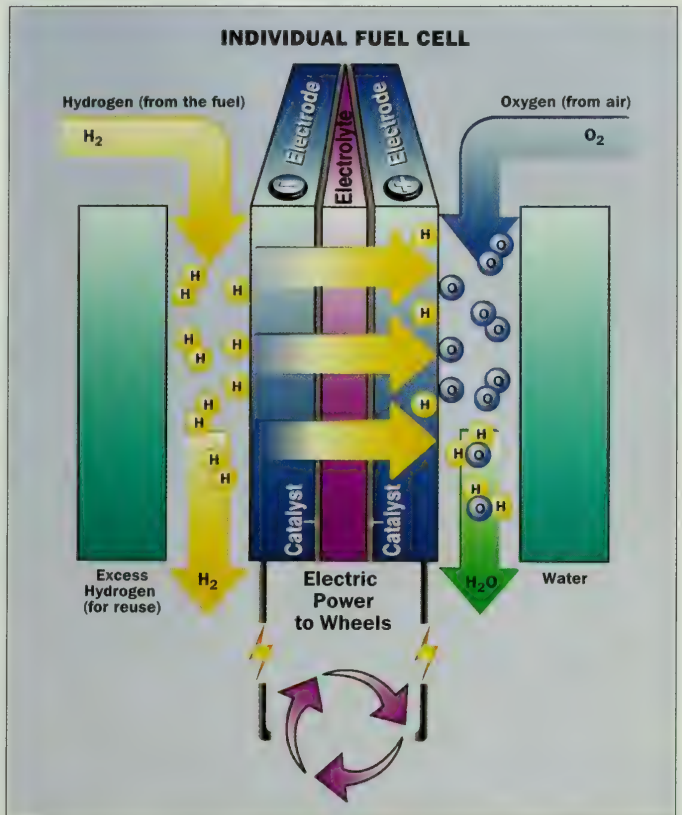
FUEL CELLS ARE THE ENERGY SOURCE OF THE FUTURE, AND SOME THINK THAT BECAUSE THE TECHNOLOGY IS TOO COMPLEX, THEY ALWAYS WILL BE

By Gerry Khermouch

Five years ago, advocates of fuel cells finally had a striking poster child for commercial building applications: an installation by a speculative developer in a high-rise being erected in Midtown Manhattan. The Condé Nast Building at 4 Times Square, put up by the Durst Organization, was meant as a progressive statement about sustainability, and the fuel cells—housed in a plenum right behind the 48-story building's signage—were an integral part of that vision. They brought to a real, commercial environment the promise of a nearly emission-free energy source that uses hydrogen and oxygen to yield electrical output with only heat and water vapor as by-products. Quickly, the tower had been nicknamed the Green Building and was seen as a milestone of broad acceptance of fuel cells, photovoltaics [RECORD, January 2001, page 121], and other cutting-edge technologies. True, they supplied only a small fraction of the building's energy needs, providing hot water and lighting the facade. And technical compromises made to accommodate that high-density environment ensured that, when the lights would go out in New York on August 14, 2003, the cells would not be available as a backup power source. But as a gesture of advocacy by the Dursts, it was as grand as any billboard blazing in the night sky above Times Square.

The status of fuel cells today

Fast forward to 2004 and ask architects or engineers where the action in fuel cells is these days. Their answer? For most, it's still 4 Times Square. That can be seen as deserved testimony to the farsightedness of the developer and its designer, New York–based Fox & Fowle Architects, in pioneering the installation. Alas, it's also a sign that adoption of fuel cells has stalled, as the first-generation phosphoric-acid technology employed by the Dursts approaches obsolescence, with the migration path from there anything but clear. Meanwhile, those involved in 4 Times Square have largely moved on, at least for now. Neither Fox & Fowle, the Dursts, nor Cosentini Associates, the engineers, have any further fuel cells on the drawing board; rather, they are enthusing about the more practical benefits of microturbines for some of their new projects. Other architecture firms that are identified with a strong commitment to sustainable design have similarly found fuel cells a tough slog. McDonough + Partners, HOK Sustainable Design, Gensler—none can point to a completed project of theirs involving fuel cells. HOK, at its Canadian unit, Urbana Architects, does have a project currently in development that calls for fuel cells—a government building in Charlottetown, on Canada's Prince Edward Island, that is intended to be a showcase for the national govern-



A fuel cell produces electricity from the electrochemical reaction between hydrogen from a hydrogen-containing fuel (either fossil or renewable) and oxygen from the air.

Gerry Khermouch, who has served as an editor at Brandweek, Business Week, *and* The Electricity Journal, *writes about energy, technology, and marketing.*

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 174 and follow the instructions. Other opportunities to receive Continuing Education credit in this issue include the following sponsored section: "Technological Developments in the Manufacture and Prefinishing of Wood Windows and Doors," sponsored by Eagle Window and Door, Inc., page 183.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Describe the sustainable-energy theory of fuel cells.*
2. *Discuss the current state of hydrogen energy sources.*
3. *Explain why fuel cells are not currently being installed in architectural projects.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **www.architecturalrecord.com**.

LOW-ENERGY DESIGN AND RENEWABLE ENERGY AT 4 TIMES SQUARE

Materials

4 Times Square designers emphasized environmentally responsible construction, choosing nontoxic and biodegradable materials as well as sustainably harvested wood and low-water-use equipment.

Resource conservation was also a priority. A structural steel **hat truss** at the top of the building significantly reduced the amount of steel used. The structure provides a rigid frame for resisting wind loads and reduces building sway. The introduction of concrete as a structural element further reduced the amount of steel needed. Also, to save materials, the existing footings at the corner of 42nd and Broadway were reused. Approximately 65% of construction debris was recycled.

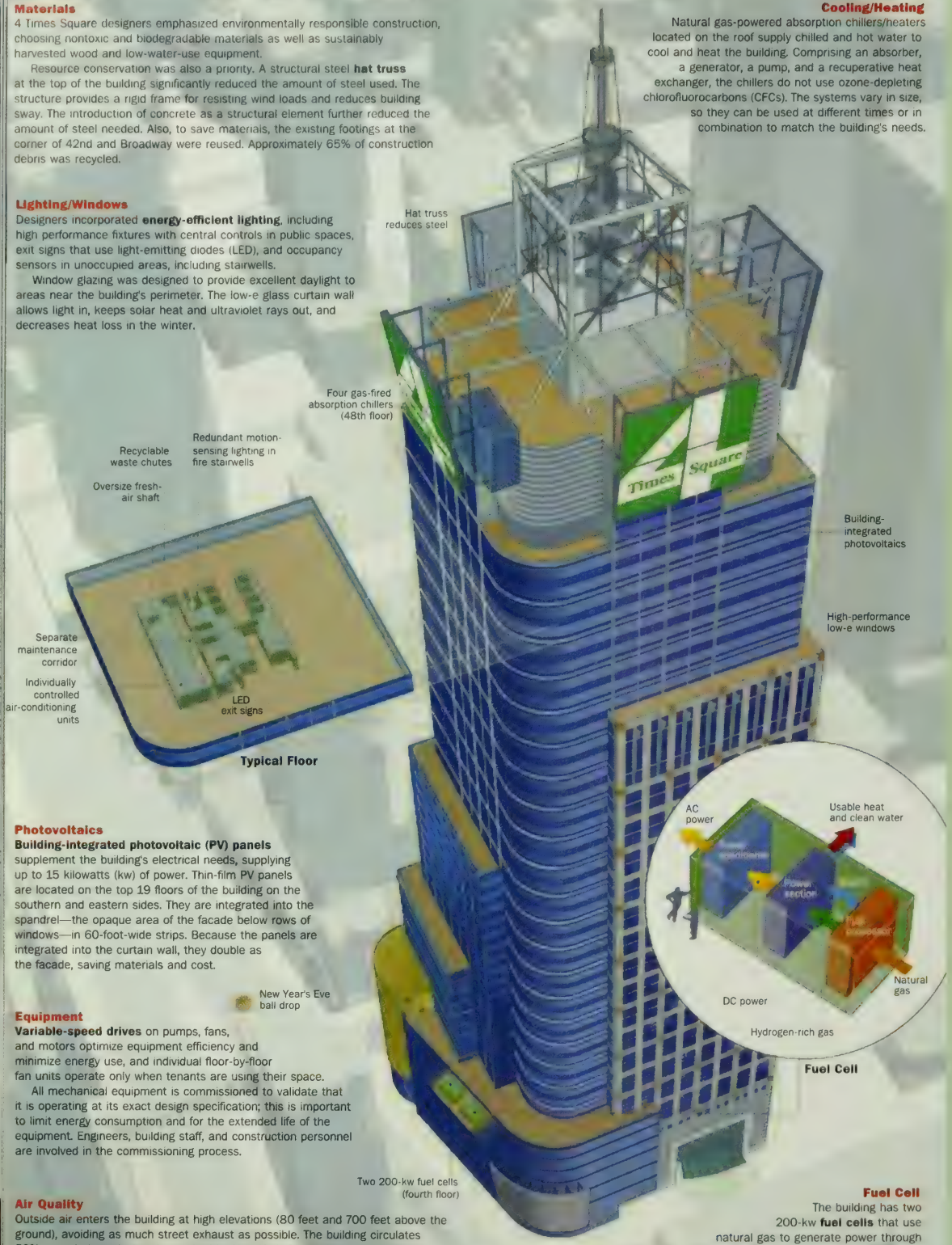
Cooling/Heating

Natural gas-powered absorption chillers/heaters located on the roof supply chilled and hot water to cool and heat the building. Comprising an absorber, a generator, a pump, and a recuperative heat exchanger, the chillers do not use ozone-depleting chlorofluorocarbons (CFCs). The systems vary in size, so they can be used at different times or in combination to match the building's needs.

Lighting/Windows

Designers incorporated **energy-efficient lighting**, including high performance fixtures with central controls in public spaces, exit signs that use light-emitting diodes (LED), and occupancy sensors in unoccupied areas, including stairwells.

Window glazing was designed to provide excellent daylight to areas near the building's perimeter. The low-e glass curtain wall allows light in, keeps solar heat and ultraviolet rays out, and decreases heat loss in the winter.



Photovoltaics

Building-integrated photovoltaic (PV) panels supplement the building's electrical needs, supplying up to 15 kilowatts (kw) of power. Thin-film PV panels are located on the top 19 floors of the building on the southern and eastern sides. They are integrated into the spandrel—the opaque area of the facade below rows of windows—in 60-foot-wide strips. Because the panels are integrated into the curtain wall, they double as the facade, saving materials and cost.

Equipment

Variable-speed drives on pumps, fans, and motors optimize equipment efficiency and minimize energy use, and individual floor-by-floor fan units operate only when tenants are using their space.

All mechanical equipment is commissioned to validate that it is operating at its exact design specification; this is important to limit energy consumption and for the extended life of the equipment. Engineers, building staff, and construction personnel are involved in the commissioning process.

Air Quality

Outside air enters the building at high elevations (80 feet and 700 feet above the ground), avoiding as much street exhaust as possible. The building circulates 50% more indoor air than is required by New York City code, with additional capacity in the system to purge any four floors simultaneously with 100% outside air. The air is 85% filtered and monitored, and floor-by-floor air-handling equipment allows individualized control and indoor air purge capacity.

A dedicated exhaust shaft is available to vent smoking and equipment rooms, and cleaning materials and building maintenance materials are nontoxic. Furniture, carpeting, materials, and finishes also affect air quality, but these are specified by tenants; a set of tenant guidelines encourages installation of the most benign furnishings and finishes.

Fuel Cell

The building has two 200-kw **fuel cells** that use natural gas to generate power through a chemical reaction. Located on the fourth floor, the cells provide 100% of the nighttime electric demand without combustion, and hot water and carbon dioxide are the only by-products. The hot water is used to help heat the building during winter and to help heat domestic hot water. In the United States, 42% of all energy produced is lost as waste heat in combustion and transmission; generating energy on-site and without combustion avoids substantial energy loss.

It's a beginning

At 1.6 million square feet, 4 Times Square is the first building of its kind to adopt standards of energy efficiency, including two 200-kilowatt fuel cells that use natural gas to generate power.

ment's recently announced sustainability initiative. Still, with working drawings nearly complete and construction expected to begin this summer, the obstacles in the way are so formidable that it is far from assured that a fuel cell can be successfully designed in, at least at the initial stage of the project. "It's more science than [practical] technology right now," says Ken Brooks, senior associate at Urbana. "So far, we've been tantalized with the possibilities, but bottom-line reality may put it some time away."

Fuel cells are tantalizing because they hold the promise of anchoring a clean and sustainable energy system that will lessen the massive carbon dioxide and other greenhouse gas emissions that have been linked to climate change. At first blush, fuel cells seem nearly ideal energy sources—clean hydrogen and oxygen input yields water vapor plus electrical output, and all of this is accomplished in a continuous, quiet, and highly efficient manner. The best analogy is to another, more familiar electrochemical power device, the battery. Both convert the chemical energy of a fuel into direct-current electricity, but batteries contain limited fuel, whereas fuel cells are replenished externally and so can supply electrical energy over a much longer period of time. Like batteries, fuel cells strip electrons off chemical compounds and recombine them, sending the resulting electrical current out for use.

Fuel cells come in several flavors, starting with the phosphoric acid fuel cells (PAFC) that have comprised the vast majority of installations over the past decade—including 4 Times Square—but are viewed as an obsolete technology. Looking ahead, that leaves two principal types for stationary applications: solid oxide fuel cell (SOFC) and proton exchange membrane (PEM) types (see diagram, page 169), which is the variety now touted for automotive use. (Another variety, molten carbonate, is seen as serving only a niche market for data centers and hospitals.) The biggest differences between the two technologies lie in their operating temperatures and component materials. SOFC units, which are based on solid ceramics, function at anywhere from 700 to 1,000 degrees centigrade. PEM devices, on the other hand, run at lower temperature (80 degrees C) using polymer materials. Low temperatures reduce the chemical activity of the fuels and the activity of catalysts, whereas high temperatures speed operation but can reduce operating lifetimes.

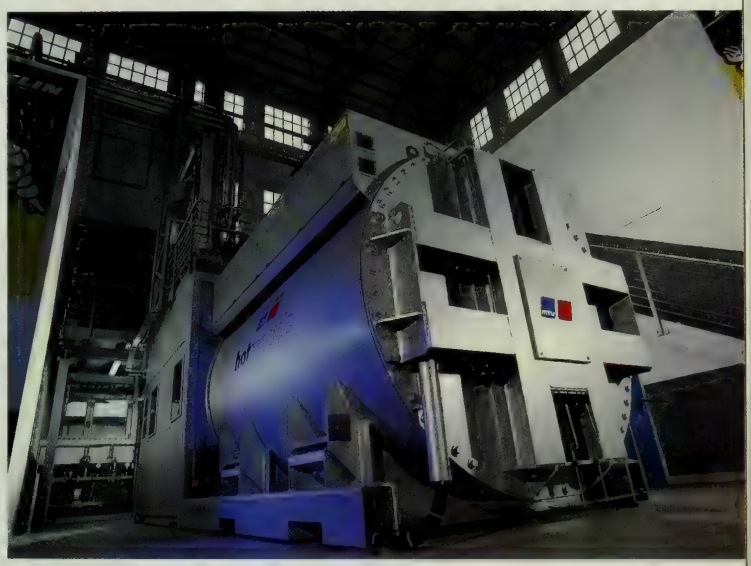
Current SOFC units burn natural gas as fuel. Although these power supplies are technically well developed, their manufacturers seem hesitant to offer them as commercial products. Meanwhile, PEM-based power supplies must surmount a fundamental barrier: They must run directly off hydrogen. United Technologies' UTC Fuel Cells division (www.utcfuelcells.com) in Hartford, Connecticut, which has installed about 250 PAFCs, including two 250-kilowatt units at 4 Times Square, has ceased manufacturing those as it prepares to migrate to the more promising PEM variety, but it is not ready to say when it expects PEM units to be commercially available.

So what's gone wrong? Well, everything, and nothing. After all, this is a new technology, and proponents have no doubt that it will eventually deliver on its promise of clean energy. But costs have been stubbornly slow to come down, and the confusing welter of approaches has made it difficult for architects and developers to commit to a particular approach for a particular building. That has hindered adoption and even encouraged some fuel-cell proponents to look to transportation applications to move the technology to a more efficient scale. Not long ago, it seemed obvious that stationary applications would have to play this vanguard role, given the tougher requirements that propulsion cells must meet in terms of cost and weight.

"It's been much slower than anybody anticipated in terms of real products," says Ashok Gupta, director of air and energy programs for the Natural Resources Defense Council (NRDC) in New York, which served

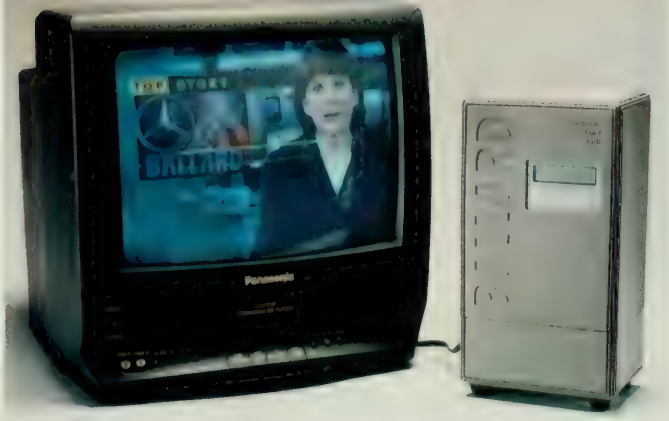




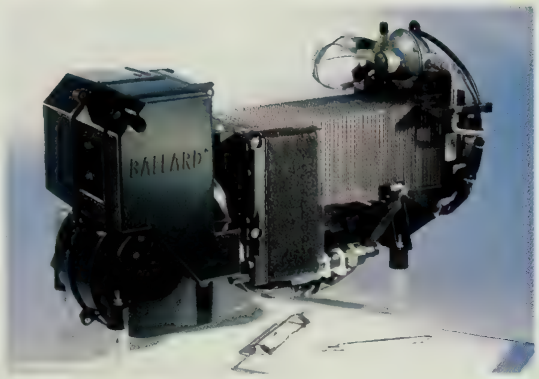


Fuel-cell power plants

A 250-kilowatt fuel cell (top) can power a large hotel. A 75-kilowatt hydrogen UTC PEM fuel cell (middle) can power an electric bus while charging backup batteries. A 250-kilowatt carbonate, high-temperature fuel cell (bottom) powers a Michelin tire plant in Karlsruhe, Germany. This fuel-cell power plant was manufactured by FuelCell Energy.







Small, portable, and flexible fuel cells
Fuel cells need not be gigantic and obtrusive. A microfuel processor, such as the one developed at Case Western Reserve University (top right), makes existing fuels with a cell. Ballard Power systems' new Nexa modular system (above) allows PEM units to be stacked and easily replaced. Portable fuel cells (top left) are small, light, and make good auxiliary power sources.

an advisory role in the design of the Condé Nast building. "People are still waiting for the next generation of technology to become available. In the meantime, there is little activity of the sort we saw at 4 Times Square."

Gupta notes that the NRDC remains bullish on fuel cells, and there are applications, such as sewage treatment and banking back-office operations, in which even the current generation of technology has proved commercially viable, albeit with a healthy dose of up-front incentives. Those tend to be applications with intensive, around-the-clock energy needs that can make use—say, for heating and cooling—of the intense heat that can be a by-product of fuel cells. For general commercial and residential applications, though, fuel cells are still a considerable way from being ready for prime time.

Still, the palpable promise of the technology has lately driven the fuel cell to the lofty status of Holy Grail for those promoting the hydrogen economy, a system in which hydrogen would replace fossil hydrocarbons as the world's basic carrier of chemical energy. Expectations for fuel-cell technology were raised further by President George W. Bush's 2003 State of the Union message in which he proposed spending $1.5 billion on hydrogen research and development. Unfortunately, producing hydrogen fuel without releasing carbon dioxide is either highly problematic, costly, or both. To date, most installations "crack" the hydrogen from another fuel source, usually natural gas, rather than relying on pure delivered hydrogen. So anyone contemplating installing "clean" fuel-cell power supplies must face the fact that most current stationary fuel-cell installations burn fossil fuels or derive hydrogen indirectly from hydrocarbons. This abiding drawback certainly doesn't help the case for adoption, despite the financial incentives offered for installation.

Waiting for costs to come down

Then there is the difficult question of expense. Existing fuel cells are providing power at an installed cost ranging anywhere from $4 to $6 per watt, compared with $1 to $1.50 per watt for conventional gas turbines. The cost of microturbines, which are highly efficient but do not eliminate emissions, fall somewhere in between the two.

Hence, the current chicken-and-egg situation, as sympathetic architecture and engineering firms eagerly wait for costs to decline so they can begin adopting the technology for their clients. "Expense is a big issue; $4 or $5 or $6 per watt installed is a really big number," says Daniel H. Nall, FAIA and P.E., senior vice president at Flack + Kurtz in New York, which has installed fuel cells at a casino in Connecticut and performed remedial work at 4 Times Square. "People want prices to come down, but prices have not come down because people haven't bought anything." The one manufacturer with a meaningful installed base, UTC, has not shown an encouraging cost trend for the 250 PAFC units it has sold so far (three quarters of them funded in part by the Defense Department), at an average cost of $4.50 per watt. Disturbingly, "the cost of PAFC units has not decreased and in fact has increased from $3,500 per kilowatt," or $3.50 per watt, according to a report issued in February by the National Academy of Engineering called "The Hydrogen Economy: Opportunities, Costs, Barriers, and R&D Needs." "These units are not cost-competitive with other DG [distributed generation] options, which can provide the same reliability and high-quality power efficiency," the report states. According to Department of Energy projections, which some consider optimistic, it will take another five to 10 years for the installed cost of fuel cells to drop to the $1-per-watt range.

As one example of the daunting complexities involved, take the simple matter of efficiency. The most efficient fuel cells currently available in the marketplace, including solid oxide and molten carbonate, are those that operate at extremely high temperatures. To obtain peak efficiency, they need to operate as close to 24/7 as possible, at full power. That's on purely technical grounds; of course, the need to amortize their high up-front costs provides a strong economic incentive to run flat out, too. That might be all right for factories, data centers, or hospitals with intensive energy needs and high demand around the clock, but it doesn't always work for residential and commercial buildings—particularly since in

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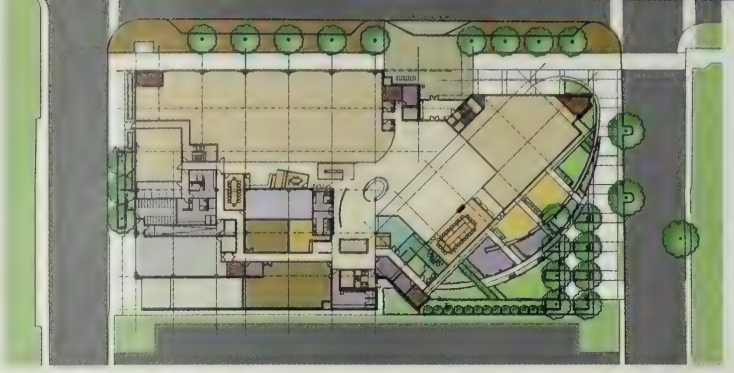
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The struggle to mainstream fuel cells

HOK's Canadian unit, Urbana Architects, has a project currently in development that calls for fuel cells: a government building in Charlottetown, on Prince Edward Island, which is intended to be a showcase for the national government's recently announced sustainability initiative. However, the architects admit that practical applications are a long way off.





many places the local utilities make it difficult to sell excess energy back into the grid. Even where utilities are willing to purchase the energy, if that excess energy is being produced at a period of low demand—say, at night—it commands a negligible price in the marketplace anyway. And if the building can't make effective use of the heat thrown off, then another key dividend is being wasted.

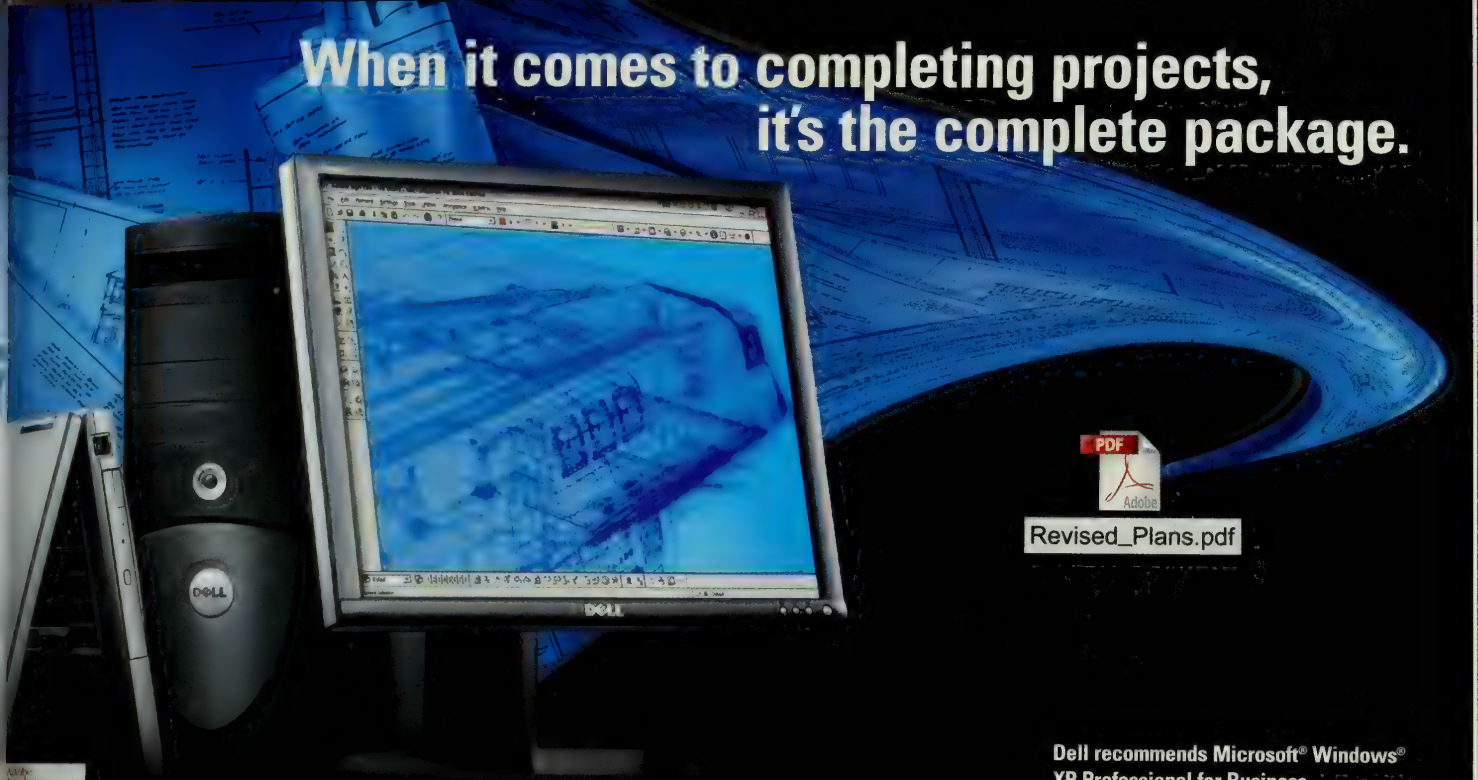
Hence, 4 Times Square, while brilliantly successful as a statement of purpose and potential, is harder to justify on sheer economic grounds. "On-site generation as a model was very appealing philosophically," recalls Dan Kaplan, AIA, senior principal at Fox & Fowle, who runs its high-rise studio. "It's smaller, more flexible, more responsive. There are no line losses, and a fairly low level of emissions beyond carbon dioxide—no SO_x or NO_x [sulfur or nitrous oxides]." Those are by no means trivial benefits, but Marvin Lewin, vice president and project manager at Cosentini Associates, recalls that if it weren't for healthy rebates, the project would not have been a go under any circumstances. Several aspects of the project made it a far from ideal environment for fuel cells. For starters, "Times Square is not exactly starving for electricity," he notes. Further, the natural-gas-fed cells would not be available as an emergency backup source, because gas brought in from street lines is considered a fire hazard. (That's why 4 Times Square stayed dark during last year's blackout.) Although the 500 kilowatt of power was more than the building needed at night, safety requirements of the local utility, Con Edison, made it impractical to try to sell the excess power back into the grid. Not least, the PAFCs don't throw off intense-enough heat to be of great use—"not unless they've got a lot of dishes to wash," quips one observer. Indeed, remedial work was needed to disperse that heat—a completely saturated, 140 degrees C air stream that was creating a plume of steam right behind the Times Square signage. "They never really conceived what to do with the heat—and if it's not used, it becomes a pain," says Flack + Kurtz's Nall. Eventually, the manufacturer did adapt the fuel cells to lessen that problem.

Of course, complications like that are to be expected in a pioneering application. But how do the numbers come out? Not so impressive, it turns out. With roughly $150,000 in rebates, the $1.5 million cost of the fuel cells ($800,000 for the cells themselves plus installation costs) suggested a payback period of about seven years. But even there, there is a big catch: After six or seven years, the main fuel-cells' modules—the so-called catalyst stack—are anticipated to need replacement at a cost of close to $500,000. The solution to that quandary? "There's no payback unless you threw it away and put in a new one—with a new rebate," Lewin notes drily.

The math doesn't add up much differently for others who have essayed fuel cells. At a massive expansion of the Mohegan Sun casino and entertainment complex in Connecticut, a pair of 250-kilowatt PAFCs engineered by Flack + Kurtz has been able to put its heat output to good use running a deaerator for water that enters the boilers there. That still didn't put it over the top on economic grounds. Rather, it was among a batch of capital improvements that were mandated by the state to offset the environmental impact of the traffic that the casino creates. The return on investment? "I don't know that that's been calculated," says Nall.

The Charlottetown government office building, which is being designed by HOK's Canadian unit in concert with the local firm Bergmark Guimond Hammarlund Jones, reflects the difficult trade-offs that can be involved even where there is that magical combination of eager client, progressive designer, and sympathetic local community.

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Hydrogen's uncertain future

To serve a role as a source of emergency generation, the fuel cell would require "instant on" capability that generally calls for the use of direct hydrogen fuel. But while the government of Prince Edward Island has launched an initiative to develop a hydrogen infrastructure, that capability does not exist now. "This building could be one of the first steps in developing the hydrogen economy of the island," says Urbana's architecture practice leader Richard Williams. But there is no assurance at this point if or when that initiative will bear fruit. A more practical alternative would be to eschew a hydrogen-fed fuel cell in favor of one fed by natural gas. Those have the benefit of good efficiencies and a proven track record. But Prince Edward Island currently lacks access to natural gas, although that too has been under discussion in the province. Liquid propane would also work, but fuel-cell manufacturers are leery of going that route given their urgent need to focus on the broadest applications.

The bottom line: Even for the flagship building in Charlottetown, fuel cells may be a nonstarter, Williams acknowledges. He hopes a decision can be reached by the end of this year, but the building will be designed so fuel cells can be added at a later stage. "It's really been an eye-opener," he said. "The immediate future of fuel cells really seems to be more automotive than buildings, because of the sheer volume of production" anticipated once car applications kick in.

Given the stiff challenges confronting mobile fuel cells, that may be wishful thinking. Either way, the timeline of development and adoption is likely to be extended. Thus, it's paramount for architects, engineers, and their clients to maintain a realistic perspective and not overweight the value of fuel cells over more established, cost-effective green applications, says NRDC's Gupta. "We're still positive and supportive," he says. "But we know we can't oversell it. We should not forget conventional technology—good old energy efficiency, daylighting, natural ventilation. That's where architects should look, not the sexy technologies first." In the meantime, space can be designed in for when fuel cells are commercially ready, as Cosentini Associates has done in a residential tower that the Dursts are putting up in New York's Battery Park City development, and as is being contemplated for the Charlottetown building. Still, many architects and engineers plan to continue to proselytize for fuel cells, without understating the challenges involved in justifying them economically.

"Generally, we bring the understanding and interest in fuel cells to our clients," says Jeff Barber, AIA, principal and lead buildings and campuses designer at Gensler, and a member of the firm's sustainable design task force. Though Gensler has been unable to make fuel cells a go yet for its own projects, Barber insists the experience has not chastened him in the least. "Technologically, I have great hope for fuel cells. But to be effective in the marketplace, they do have to be cost-effective and with proven reliability. That's the Catch-22 of new technology." ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- **Read the article "Alternative Energy Sources" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers (page 242).**
- **Fill out and submit the AIA/CES education reporting form (page 242) or download the form at www.architecturalrecord.com to receive one AIA learning unit.**

QUESTIONS

1. Which type of fuel cell is the first generation?
- **a.** Solid oxide
- **b.** Phosphoric acid
- **c.** Proton-exchange membrane
- **d.** Molten carbon

2. Which type of fuel cell must run directly off hydrogen?
- **a.** Solid oxide
- **b.** Phosphoric acid
- **c.** Proton-exchange membrane
- **d.** Molten carbon

3. Which type of fuel cell is used only for around-the-clock operations, such as hospitals?
- **a.** Solid oxide
- **b.** Phosphoric acid
- **c.** Proton-exchange membrane
- **d.** Molten carbon

4. Which is not an advantage of fuel-cell technology?
- **a.** A low-cost energy source
- **b.** A sustainable energy source
- **c.** A quiet energy source
- **d.** A clean energy source

5. The promise of fuel-cell technology is that hydrogen would replace fossil hydrocarbons as which?
- **a.** The choice for developed nations' energy
- **b.** The world's basic carrier of chemical energy
- **c.** The least expensive source of energy
- **d.** Economical heating fuel

6. Which of these energy sources is currently the most expensive?
- **a.** Microturbines
- **b.** Gas turbines
- **c.** Fuel cells
- **d.** Batteries

7. On-site generation offers all except which of these benefits?
- **a.** More flexibility and responsiveness
- **b.** Low sulfur-oxide and nitrous-oxide emissions
- **c.** No line losses
- **d.** Low up-front costs.

8. Why is it difficult to sell excess energy from fuel cells back to the energy grid?
- **a.** The type of energy source is difficult to convert to a usable form
- **b.** The high temperature of fuel-cell energy makes it dangerous for power companies to transfer
- **c.** There is a low market-place price for energy produced at low-demand times of day
- **d.** There isn't enough excess energy to make a transfer worthwhile

9. In order to serve as a source of emergency power, generation fuel cells need to be able to do which?
- **a.** Convert gas into hydrogen fuel
- **b.** Be instantly available
- **c.** Have long-term storage capacity
- **d.** Convert easily to mobile fuel cells

10. Complications associated with switching to fuel cells include all of the following except which?
- **a.** There are no incentives
- **b.** The up-front costs are too hard for clients to justify
- **c.** Creating energy from pure hydrogen is still technically problematic
- **d.** Manufacturers are more inclined to focus their research and development on the broadest applications rather than project-specific needs



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Tech Briefs

Archiving: A museum study will help digital design files overcome historic problems • Sustainability: Coatings for cleanup? A new paint may absorb vehicle emissions

The Art Institute of Chicago examines how best to archive digital design data

Archiving project information was once merely a matter of collecting, organizing, and filing away paper drawings, each one created anew as design progressed. But what about records of the iterative steps that illustrate a design team's thinking and the creative prowess behind a successful work of architecture? Saving this sort of historical record takes forethought to keep intermediate digital documents files from getting overwritten in the crush of new work. The almighty "delete" key makes it far too easy to eradicate the evolution of a design even before the project is completed.

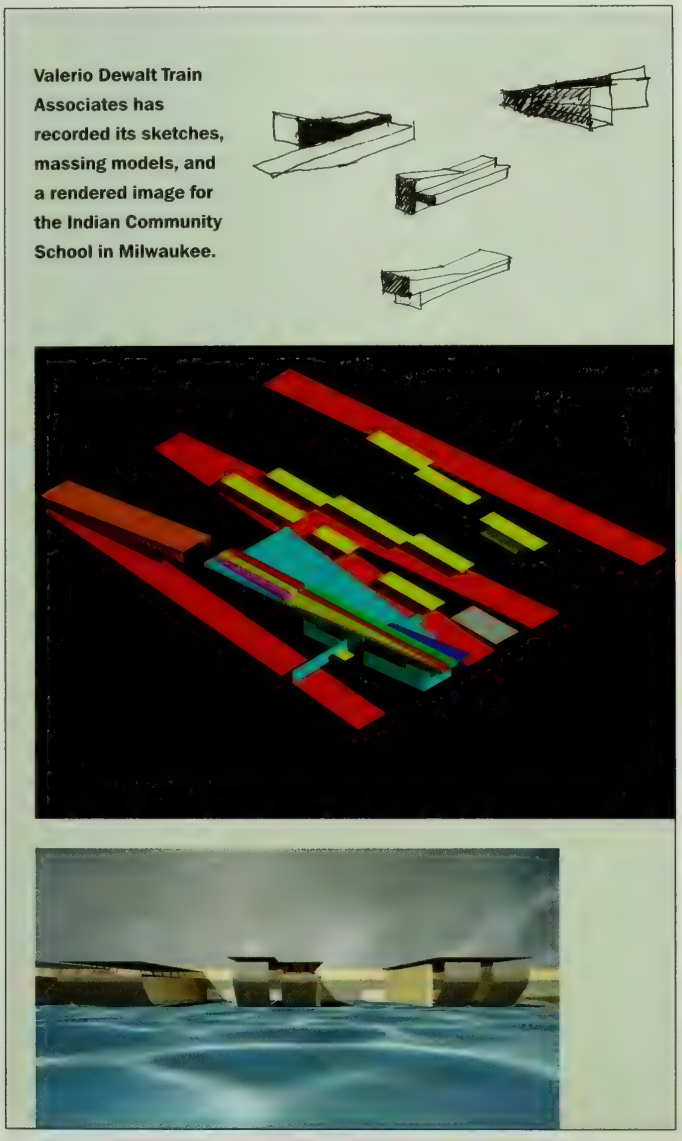
Archivists are now taking action to make sure these steps aren't lost to the ages. Early last year, the Department of Architecture at the Art Institute of Chicago began a comprehensive study to find the best ways of collecting, archiving, and exhibiting digital design data. Chicago architect Kristine Fallon, FAIA, president of Kristine Fallon Associates, heads the project, which involves a team of architects, academics, museum curators, and technology experts who are reviewing the challenges of maintaining digital archives and will ultimately provide recommendations for best practices.

Backed by grants from the Schiff Foundation and the Graham Foundation for Advanced Studies in the Visual Arts, the Institute hopes the study will have a direct impact on how museums and other institutions preserve architectural work. Commercial design firms will also benefit from the study's guidelines, Fallon says. Architects who don't implement digital-archiving practices are "like artists using evaporating paint," she believes. "Most architects like to be immortal. Not having digital archives threatens their immortality."

Thorough archives also play an important role in expansions and additions to existing projects, and in the restoration and renovation of historic buildings. Even more pragmatically, past design elements are often reused in new projects, adds Scott Pratt, director of digital technology and senior vice president for the Chicago architectural firm Murphy/Jahn, one of the firms involved in the Institute's study. "Often, a project is an evolution of a prior work. It just makes sense to keep archives," he says.

Digital archivists face two hurdles in this effort. One is procedural: convincing firms to implement policies for documenting important project milestones. The other problem is technical: how to ensure digital files don't fall out of commission. "I can't bring back a word-processing file from 10 years ago—how are people going to read an architect's digital design data after 100 years?" Fallon wonders.

The Art Institute is one of many organizations addressing these challenges. The National Archives and Records Administration (NARA) in College Park, Maryland, the agency responsible for managing and preserving federal records and priceless historical documents like the Declaration of Independence and the Constitution, is spending $36 million annually in its Electronic Records Archives (ERA) program to find better ways of preserving digital documents. After working for years with other government agencies, as well as universities, other archives, and research facilities throughout the world, NARA selected a systems integrator earlier this year to design its electronic archives, the first phase of which could come online by 2007—but ERA officials don't expect their solution to be fully functional until seven years after that.



Valerio Dewalt Train Associates has recorded its sketches, massing models, and a rendered image for the Indian Community School in Milwaukee.

The Art Institute's study will set forth recommendations long before that. The first phase of its study, completed earlier this year, surveyed archiving best practices at 63 design firms throughout the world, ranging in size from a sole practitioner to those with thousands of employees. This survey will become the basis for guidelines to be included in the final study report this summer.

In March, the Institute sponsored a daylong exhibition—essentially a design charrette with three teams of museum staff, designers, and technology gurus. Each team examined a number of in-progress and completed projects with various types of digital information available. "The exercises raised a number of questions about the role of museums, curators, and architects regarding who collects or

saves information and how conservation of digital files is best carried out," Fallon says. "We also examined some wild ideas about using digital data as a source of exhibition material." The results of the study will be available this summer on the Institute's Web site and will be presented in September at the International Confederation of Architectural Museums in Venice.

Some of the study's preliminary results and recommendations are already surfacing. For instance, to combat obsolescence of archival documents, a proposed global registry could alert architects to digital file types that are in danger of disappearing and provide a way for architects to reformat their files.

Software vendors are also working to tailor existing file formats to improve them for archiving. Adobe Systems is now developing offshoots of its original and ubiquitous PDF format, including PDF-A (for archiving), envisioned to be a slimmed-down version of a standard PDF file that can handle text, raster images, and vector graphics. A second variant, PDF-E (for engineering) will accommodate large-format graphics and 3D models. And Autodesk is considering making its existing DWF format capable of capturing graphics elements of a file as well as creating a snapshot of associated design information, according to Jon Pittman, AIA, Autodesk's senior director of strategic research.

Architectural firms shouldn't wait for new technologies before starting to preserve their digital work, Murphy/Jahn's Pratt says. His firm keeps a small number of electronic photos, presentation drawings, elevations, and renderings of finished projects on its network. But most iterative design drawings and related documents are saved on DVDs about six months after a project's completion, Pratt says. The firm doesn't record every design change, but instead concentrates on important milestones, such as the completion of schematic designs or bid sets. CAD drawings remain in native AutoCAD format, whereas renderings and photos are stored as TIF or JPEG files. "For a project that's five years old or younger, we have between two to five or more DVDs, which have all of the CAD files, all the versions of renderings and presentations, as well as the PowerPoint shows created in the course of development," Pratt says. "Prior to the digital era, we may not have every presentation that was created along the way," he says. Once the technical challenges of digital archives are ironed out, they may make historical records even more comprehensive than when paper ruled the design process—a big step toward architectural immortality. *Alan Joch*



Ross Barney + Jankowski worked with client teams to develop a total of four massing models for the James I. Swenson Science Building for the University of Minnesota at Duluth. The firm saves each digital alternative as part of the project record.

In the lab, paint makes NO_x gases harmless—but can field trials make the same claim?

Gasoline-powered vehicles are *"machinas non gratas"* as far as environmental protectionists are concerned, but one coatings company says they can now paint away tailpipe emissions. The makers of a new product called Ecopaint, Millenium Chemicals, claim that it can convert nitrogen oxides (NO_x) gases into harmless substances. The NO_x gases are a well-known trigger for smog production and respiratory difficulties. In March, the company began selling Ecopaint to the AEC community in Europe, with plans to extend to other markets soon.

Here's how it works: The paint's polymer base is embedded with nanosize spherical particles of titanium dioxide and calcium carbonate. In theory, NO_x gases would seep into a coating of the paint on a building or street bench or other surface and adhere to the titanium dioxide particles, which would use the sun's energy to break down the gases into nitric acid. The acid would then be either washed away by rain or neutralized by the calcium-carbonate particles to create carbon dioxide, water, and calcium nitrate, another soluble acid. In theory, the company says, a 0.3-millimeter layer of paint could neutralize NO_x gases for up to five years in a heavily polluted city, but no field tests have been conducted yet.

Paul Miller, an air-pollution expert and program coordinator for the Commission for Environmental Cooperation in Quebec, says field and comparison studies are key for determining the paint's efficacy as a cleanup method. The claims are plausible based on the paint's chemistry, he says, but "there's not much information on what happens with NO_x in the air in the absence of these painted surfaces." The proximity of vehicle emissions to painted surfaces can also make a difference in how effective the paint is, he adds. The gases may never come close enough to painted surfaces to react in the way that's been demonstrated in lab tests. He recalls a catalytic coating once used on car radiators that was supposed to remove ozone as people drove: "The ozone never came into contact with the radiator's surface at the right time for the reaction to be very efficient or effective in removal."

Above all, Miller questions whether painting buildings and park benches with an NO_x-removing paint is the correct approach toward environmental protection, since preventing pollution from being created at all should take precedence over cleaning it up after the fact. "We don't need excuses to make people feel good about driving more miles in their vehicles," he says. *Deborah Snoonian, P.E.*



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Technological developments in the manufacture of wood windows and doors

Today's windows and doors represent the best of both worlds in terms of the wood materials used for their construction. The exposed surfaces of these components typically feature the natural beauty of solid wood or wood veneers highlighted in a variety of protective factory finishes. In the unexposed areas, such as window frames where characteristics such as strength and stiffness are required instead of aesthetics, manufacturers are using engineered wood products such as laminated veneer lumber (LVL), finger-jointed solid wood and other composite materials.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Technological developments in the manufacture of wood windows and doors.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 187, then follow the reporting instructions on page 244 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Describe the implications of the natural defects of wood in the manufacture of building materials.*
- *Explain the development and use of engineered wood products, such as laminated veneer lumber (LVL), in the production of wood windows and doors.*
- *Identify advantages in factory finishing and the use of water-based solvents when finishing wood products.*

Improving on nature

In general, window and door manufacturers consider anything other than a solid piece of wood as an engineered product. This class of materials is addressed in the Window and Door Manufacturers Association (WDMA) performance standard (WDMA I.S.-10-99 — The Industry Specification for Testing Cellulosic Composite Materials for Use in Fenestration Products).

According to that specification, "The wood working industry uses many familiar materials which are made by combining processed wood with polymers. Plywood, particleboard, plastic laminate and laminated veneer lumber (LVL) are all produced in this manner. These materials are considered to be composites because the fibers and polymers are not chemically combined into a new substance but remain distinctly present as separate phases of a matrix structure."

The specification explains, "Wood can be broken down in different ways into fibers, flakes, and strands. While thermosetting polymers have a long history of use in composites, combinations of fibers and thermoplastic polymers are a more recent development.... The many possible combinations of fibers and polymers give rise to materials with a wide variety of physical properties and process capabilities."

Included among the physical properties tested under WDMA I.S.-10 are elasticity, compression strength, long-term durability, moisture content, thermal conductivity, impact strength, screw withdrawal, split resistance, surface hardness and chemical resistance.

Many engineered wood products demonstrate advantages over solid wood in several areas covered under WDMA I.S.-10, such as the predictability of stiffness, strength, dimensional



LVL makes up the solid foundation of this window jamb.



Finger-jointed wood as shown here on this jamb material is an efficient utilization of wood and takes advantage of cutaways and trimmed lumber while providing added strength to the product.



Door stiles and rails are a great candidate for LVL material due to its strength and stability.

stability, treatability and dimensional consistency. And unlike solid wood stock, which is often unusable due to warpage or splitting, nearly 100 percent of engineered wood products are usable.

Used primarily for unexposed areas such as window frames and doorjambs, materials such as LVL consist of different pieces of wood, chips, shavings or lignocellulosic fibers bonded together through gluing and machined to create a desired profile. The bonding process involves combining wood material or cellulose fibers with adhesive, synthetic resin or other suitable binder under heat and pressure in a hot press.

Engineered wood products such as LVL offer enhanced dimensional stability over traditional solid wood containing natural defects. Localized knots, cross grains and other natural imperfections can create warp and twist. These natural defects can significantly influence the strength and stiffness properties of the wood and can be responsible for substantial variability.

With various engineered wood products, knots, slope of grain and other natural defects are dispersed randomly throughout the product's volume. This results in a product that exhibits dimensional stability, enhanced strength and stiffness, and with a minimum of variance from one piece to the next.

Laminated Veneer Lumber

LVL is commonly used in the fenestration industry as a superior core substrate in exterior stile and rail doors and as window components. When originally developed in the 1960s, however, LVL was primarily a structural product for floor joists, rim joists, scaffolding, studs, headers and roof trusses.

The LVL manufacturing process begins with rotary cutting raw logs into green veneer, which is then dried to a moisture content ranging from 5 percent to 10 percent. Various LVL manufacturers use different softwood and/or hardwood species, depending on application performance or machinability requirements. Each piece of veneer is visually graded, grouped according to physical defects such as knot size, coated with a waterproof adhesive and pressed under heat and high pressure.

The panels are then sawn, patched and sanded in the form of a billet, which can range in sizes up to 24 feet long. An LVL billet can be processed and machined into either finished or component products, such as those used for manufacturing windows and doors.

LVL is available in a variety of dimensions and can be custom designed and manufactured to minimize wood fiber waste. It also meets the requirements of "green" architecture, in that these veneer and gluing processes enable the end product to be made from relatively small trees of many species, which provides for efficient utilization of wood fiber resources.

The theory behind why LVL can be superior over today's solid wood stems from defect randomization. When a log is processed into thin veneers and the veneers sorted before they are glued back together, the natural defects (e.g., knots and cross grains) are randomized throughout the piece. As a result, LVL products provide greater dimensional stability due to the randomizing of natural defects.

Strength and stiffness can also be enhanced when compared to solid wood, depending on how the LVL is engineered. Structural design values are based on overall strength in addition to strength variability. LVL typically exhibits higher strength, lower variability, and therefore higher design values for structural applications. This feature allows wood fiber, in the form of LVL, to be used more wisely and more efficiently as a natural resource.

LVL is sometimes considered a commodity product when being used as structural elements in the building construction industry. LVL used for fenestration components is a specialty and requires specific design and machining properties based on end use component requirements. One LVL manufacturer provides more than 400 active lay-up designs consisting of different veneer species, veneer thicknesses and grain orientation of individual veneers. Specific sequencing of veneer types throughout the thickness of the billet defines the enhanced properties and overall performance.

When properly engineered, LVL lends itself well to the applications where solid or finger-jointed wood may not offer adequate performance characteristics. As building codes evolve and design pressure requirements increase, LVL components can be used to help make doors and windows much more robust. Common applications would include stiles and rails for entry and patio doors, mullposts, mullions, astragals, mull stiffeners and window jambs.

Finger-jointed lumber

Finger-jointed lumber is another engineered product often used by window and door manufacturers in unexposed doorjambs and selected window components. Dating back to the 1920s, finger-jointing is a wood processing technique that consists of cutting notches into the ends of wood pieces, and joining them into longer pieces with an adhesive.

Finger-jointing and edge gluing (blocks of wood that are bonded together) offers some of the same properties provided by LVL in terms of reducing warping, twisting and bowing. Finger-jointed and edge-glued boards stay straighter than and have improved dimensional stability over solid sawn lumber. Finger-jointing is also advantageous because longer and wider knot-free boards can be produced from young growth trees that would otherwise produce a larger proportion of lower quality material.

Window and door manufacturers sometimes use finger-jointed wood for products that are painted. Finger-jointed wood may be used as a paint/stain grade jamb product where the enhanced properties of LVL are not necessary. Other applications such as a paint/stain grade patio door may require the design properties that LVL offers in order to perform adequately in the field. To meet aesthetic as well as dimensional performance requirements, finger-jointed wood and LVL may be integrally attached to form a single component. The resultant engineered wood component features the beauty of solid wood and the stability and strength of LVL.

Weather resistance

As natural wood is composed of millions of minute cells, it is hygroscopic, or moisture absorbing. Cut wood is dimensionally influenced by shifts in moisture content caused by changes in the surrounding environment. Therefore, careful handling and quick finishing of raw wood by the window manufacturer is essential to prevent checking, warping, and changes in shape.

Typically, for exterior window and door applications, all exposed wood components, including engineered wood, are treated with a preservative and insect repellent to prevent decay and damage.

Both LVL and finger-jointed wood may be used in their raw state as a frame or jamb element after treatment with water repellent and preservative in accordance with the WDMA I.S.-4-99 Standard. That standard is recognized as "an internationally recognized specification for the water-repellent preservative non-pressure treatment of exterior wood and wood cellulosic composite millwork products." It is also referenced by HUD and FHA in their Minimum Property Standards and by many other government and private agencies in their construction specifications.

The general purpose of the treatment, according to WDMA I.S.-4-99 is to "retard swelling due to changes in moisture conditions and to reduce attack by decay and stain organisms." Specifically, WDMA I.S.-4 identifies the following general properties for a water-repellent formulation:

- It must contain "a wood preservative registered for use by the Environmental Protection Agency under the latest revision of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA)."
- It shall not "objectionably discolor wood, shall not cause objectionable surface residue, nor have any objectionable odor."
- When properly applied, it "shall be compatible with other materials used in the fabrication of the treated product."
- It shall be "stable at normal manufacturing conditions and shall not separate or precipitate components which will adversely affect the appearance, the effectiveness of the treatment or the ability to finish the treated product."
- When properly applied, "it shall effectively retard the formation of stains, decay and swelling that would adversely affect the appearance and/or serviceability of the millwork."

Application methods

Dipping is among the accepted methods for applying water-repellent preservative formulations under WDMA I.S.-4. Treatment normally consists of a 30-second submersion of the material in a tank, followed by 12 hours of drying under elevated temperatures. One window and door manufacturer requires its treated LVL and solid wood products to set for a minimum of 72 hours before they're sent on to the assembly line.

Other methods approved by WDMA for applying preservative formulations are spraying, flooding and vacuuming.

Under WDMA I.S.-4, "Individual manufacturers must show evidence that the substrate, treatment process, and treatment formulation demonstrate long-term performance against product decay and other moisture-related problems. The convincing evidence shall be demonstrated through completion and presentation of third-party test results to the WDMA Treatments and Coatings Technical Review Sub-committee..."

Conformance is determined by in-plant inspection of the treating facilities and by the testing of water-repellent preservative formulations. Frequent unannounced inspections and periodic laboratory tests are also conducted throughout the year to insure continued compliance with the program's requirements.

Manufacturers meeting this standard qualify for the WDMA Water-Repellent Preservative Non-Pressure Treatment for Millwork Hallmark. Architects, builders, distributors, and other consumers who desire assurance of standard water-repellent preservative treatment may include a requirement that exterior window and door millwork be treated in accordance with WDMA I.S.-4 and that it be certified or labeled with the Hallmark.

The finished product

When aesthetic beauty is required, solid wood edge strips or decorative veneers may be bonded to certain surfaces of the LVL. This results in a component that has the look and feel of high-quality, solid wood but exhibits the dimensional and strength attributes of LVL.

Additionally, the manufacturer may apply a stain or paint to coat the wood product as another protective measure.

Since aesthetics are primarily controlled by species, window and door manufacturers offer a variety of soft and hard wood options to choose from for interiors including cherry, Douglas fir, walnut, oak, mahogany, maple, alder and pine.



Factory-applied finishes are of extremely high quality and consistency. Every exposed edge of the wood is stained and sealed prior to the window being assembled.



When finished by a manufacturer, wood components are typically first treated with a preservative to fight against the decay caused by fungi or insects. Sticks are placed in between each piece of wood so the preservative will submerse into the inner layers.

Finishing is a very exacting process. The ultimate goal is to cover every exposed surface with a smooth, even finish. Factory-applied finishes are generally more consistent and smoother than those applied in the field, as the wood window and door components flow through the factory process individually and are free to accept the finishes.

The finishing process includes repetitive sanding, staining of the wood, and the application of two coats of clear protective polyurethane. Before and between the coatings and, after the coating dries, all handling marks, raised grain, scuffs, burnishes, and other undesirable blemishes are removed as it lies in a horizontal position.

When components such as finger-jointed wood are painted rather than stained, the first coating is primer. The top coat is then applied by air gun in a closed and controlled room. After finishing, the painted and stained components are passed into a large heated chamber, accelerating the drying process.

Factory finishing is described in both WDMA I.S.-1A-97 (Industry Specification for Architectural Wood Flush Doors) and WDMA I.S.-6A (Industry Standard of Architectural Stile and Rail Doors). According to those standards, "Factory finishing is generally specified when a project requires high-quality performance and superior appearance." Factory finishing offers many benefits:

- State-of-the-art equipment in a dust-free environment provides uniform color, texture, and sheen conditions normally unavailable in the field.
- Frequently in field finishing, numerous limitations prevent proper sanding. If improperly sanded, a window and door lacks the clarity of finish and uniformity of color achievable in factory finishing.
- Factory finishing provides adequate drying time in a dust-free environment.
- It ensures the wood is protected from unfavorable moisture conditions at the earliest possible time.
- In most cases, the cost of factory finishing is lower than the cost of using a separate finishing contractor.
- Factory-finished doors need only to be installed after delivery, which means faster project completion.

The consistency that factory prefinishing offers makes large projects much easier for all involved — the designer, builder, and, ultimately, the owner. The builder will discover increased efficiency, as the windows and doors need only be installed, not painted or stained on site.

Finish selection

Since window and door manufacturers typically offer several standard finishes, the WDMA recommends consulting factory finishing information before specifying the type and extent of prefinishing desired. Many manufacturers also offer non-standard stains, colors, or sheens to match an architect's selection and may provide more than one finish system. Should special window and door finishes be desired, they must be fully described in the specifications. Also keep in mind that specifying non-standard finishes may increase the cost over standard finishes.

The WDMA cautions: "Since appearance and other finish characteristics are somewhat subjective, just the selection of a finishing system does not ensure that the final finish will be acceptable. Selection of a finish should be based on physical samples provided by the door manufacturer to establish the color, grain texture, and sheen."

When selecting a finish, the WDMA reminds the architect to consider the desired appearance, exposure, and maintenance it will require. The association lists several finishes along with some of their characteristics:



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- Oiled finishes provide a natural look, which accentuates the beauty of the wood grain. However, oiled surfaces tend to dry out, leaving the wood with a thirsty, aged look that requires reapplication of oil from time to time.
- Catalyzed lacquer systems contain an ingredient for faster drying and harder film. They have the strength and higher solids of conversion coatings.
- Acrylic lacquer systems are high-quality finishes available in a variety of sheens. The clear finishes are water white in color with excellent non-yellowing qualities.
- Conversion varnish is a high-solids catalyzed alkyd-based coating, offering high resistance to chemicals, moisture, and scratches.
- Catalyzed vinyls have a vinyl-resin base and generally are the most chemically resistant of the conversion coatings.
- Catalyzed polyurethanes have a higher solids content than lacquers and provide high build and excellent hardness.
- Polyesters are very high solids plastic coatings that require special care in handling and application.

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at:

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To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, contact David Stork, at Eagle Windows and Doors, Inc., 1-800-324-5354. The following quiz questions include information from this material.

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Describe the implications of the natural defects of wood in the manufacture of building materials.*
- *Explain the development and use of engineered wood products, such as laminated veneer lumber (LVL), in the production of wood windows and doors.*
- *Identify advantages in factory finishing and the use of water-based solvents when finishing wood products.*

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 244. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. Which WDMA standard presents the industry specification for cellulosic composite materials for use in fenestration products?
 - **a.** WDMA I.S. - 1A
 - **b.** WDMA I.S. - 4
 - **c.** WDMA I.S. - 6A
 - **d.** WDMA I.S. - 10
2. Solid wood containing natural defects such as localized knots and cross grain can create warp and twist.
 - **a.** true
 - **b.** false
3. What is the general purpose of treating exposed wood components with a preservative?
 - **a.** protect wood from marring and scratching
 - **b.** provide a natural look, accentuating the beauty of wood grain
 - **c.** retard swelling due to changes in moisture conditions and reduce attack by decay and stain organisms
 - **d.** prime the wood for painting
4. Laminated veneer lumber (LVL) as an engineered wood product was first developed in which decade?
 - **a.** 1980s
 - **b.** 1970s
 - **c.** 1960s
 - **d.** 1950s
5. Compared to solid sawn lumber, finger-jointed and LVL lumber
 - **a.** are weaker
 - **b.** bend easier
 - **c.** have increased dimensional stability
 - **d.** are bigger
6. What must a window or door manufacturer do to participate in the WDMA Water Repellant Preservative Hallmark Certification Program?
 - **a.** demonstrate compliance with WDMA T.M. - 6
 - **b.** demonstrate compliance with WDMA I.S. - 4
 - **c.** demonstrate compliance with WDMA I.S. - 7
 - **d.** demonstrate compliance with WDMA I.S. - 10
7. Factory prefinishing is which of the following?
 - **a.** is generally more efficient than on site
 - **b.** is a more consistent process
 - **c.** delivers a smoother finish
 - **d.** all of the above
8. Typically, when staining wood in the factory, each piece receives
 - **a.** two coats of stain
 - **b.** two coats of stain and one coat of polyurethane
 - **c.** two coats of stain and two coats of clear polyurethane
 - **d.** one coat of stain and two coats of polyurethane
9. Volatile organic compounds (VOCs) are found in which?
 - **a.** water
 - **b.** solvents
 - **c.** soap
 - **d.** air
10. Most of the currently available water-based coatings contain a synthetic polymer.
 - **a.** true
 - **b.** false

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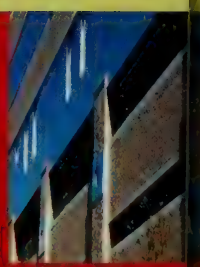
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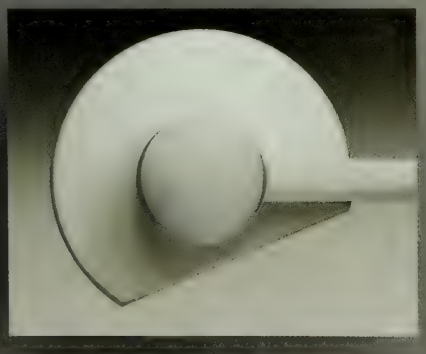
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Head to a trade fair in China to check out lighting in the Eastern Hemisphere. The China International Lighting Fair 2004 is October 18 through 23 in Guzhen, a capital of the industry there. The Guzhen Lighting Plaza is the main exhibition hall, with 2,400 booths covering 430,556 square feet, with more than 700 exhibitors. **An estimated 500,000 international visitors** and more than 50,000 professional buyers are expected to attend. The sponsors are the Zhongshan Municipal People's Government of Guangdong and a roster of Chinese trade and professional associations. For information, go to www.lightingcapital.cn, or e-mail gzlight@pub.zhongshan.gd.cn. *W.W.*

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Art is where you find it, someone once remarked. This month, we've collected reports on artfully illuminating works from as far away as Finland and as close to home as a streetfront gallery a short walk from our offices above Penn Station in New York City. Constructed to support an array of mandates, the projects show how light can enliven environments and visual media.

Regarding *The Snow Show*, which last winter brought together international architects and artists to build structures out of ice in the Lapland region of Finland, lighting designer Linnaea Tillett offers her perspective as a New York–based team member who worked through long days and nights in subzero weather—and learned to "love the experience." San Francisco photographer Richard Barnes also put on a parka to shoot arresting images of the finished follies shown in these pages (below).

This spring, in the thriving contemporary art scene of Manhattan's Chelsea district, Leo Villareal debuted his engaging new light works at the Sandra Gering Gallery. He has also collaborated on works for new buildings by leading architects such as Antoine Predock. Sara Hart takes us on a tour of Villareal's captivating pieces.

From the Pacific Northwest, Ed Carpenter creates sculpture on a large architectural scale. A Memphis library, a convention center in Richmond, and many other civic sites all benefit from his particular vision. Like the proverbial woodworker his family name invokes, Carpenter is a master of his medium, in this case illuminated steel and glass forms. John Peter Radulski finds out what inspires Carpenter's creations.

From Portland to Lapland, these spectacular or meditative works shine a light that changes our perceptions of the world we construct. *William Weathersby, Jr.*





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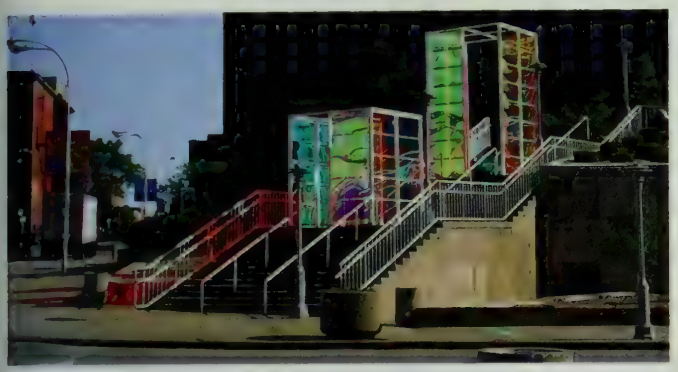
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Creative Uses

Steel towers fitted with dielectric-film-coated panels dazzle without electric power



Each summer in Kansas City, Missouri, the Avenue of the Arts Project sponsors the construction of six temporary art installations along Central Avenue. Last summer, an installation called *Dielectric Screen*, by Derek Porter Studio, was made of two open-framed steel towers lined with acrylic panels bonded with dielectric film. As if the remarkable colors that occur when sunlight strikes the panels were not enough, light transmitted through the panels produces moving fields of polychromed sunlight all along the steps leading to Barney Allis Plaza, a popular public gathering space adjacent to Bartle Hall, Kansas City's convention center.

Derek Porter collaborated on the design with two of the studio's designers, Katrina Stullken All and Katie Green. They kept the towers simple so they could stay within a budget that was as minimal as the structure itself. The team knew that it wanted to find a reflective or refractive material for the installation, and Green found the material for the panels via a Web-site search. The trade name for the material is "Radiant Color Film," and it is manufactured by 3M. The film is bonded to the acrylic panels by Cyro Industries, which markets its product as Acrylite Radiant Sheet.

"The film acts like a dichroic lens," Porter explains. "Some people describe it as like being inside a soap bubble. Others compare it to being inside a plate of Jello." The panels reflect a particular color of light, determined by the angle of the sun in relation to the angle of the panel, while at the same time transmitting the complementary color. Porter says, "The effect can be a little disorienting. The focus of the piece is on the interaction of daylight and color. As the sun shifts and the breezes move the panels, the appearance of the towers is constantly transformed."

The two towers are 16 and 10 feet tall, respectively, and 8 feet wide on each side. Fabricated by Cherry Tree Enterprises, they are made of welded steel tubes. The upper edge of each ⅛-inch-thick panel is sandwiched between two layers of neoprene rubber. These, in turn, are bolted between a piece of steel angle and another piece of flat steel. The bolts also secure a continuous piece of stainless-steel rod, the ends of which are inserted into the steel frame's columns, so the panels can swing freely in the wind. A local engineer checked the panels to ensure they could resist typical wind loads.

Dielectric Screen was dismantled last fall and is now in storage. Porter, Green, and Stullken hope that it will find a permanent home.

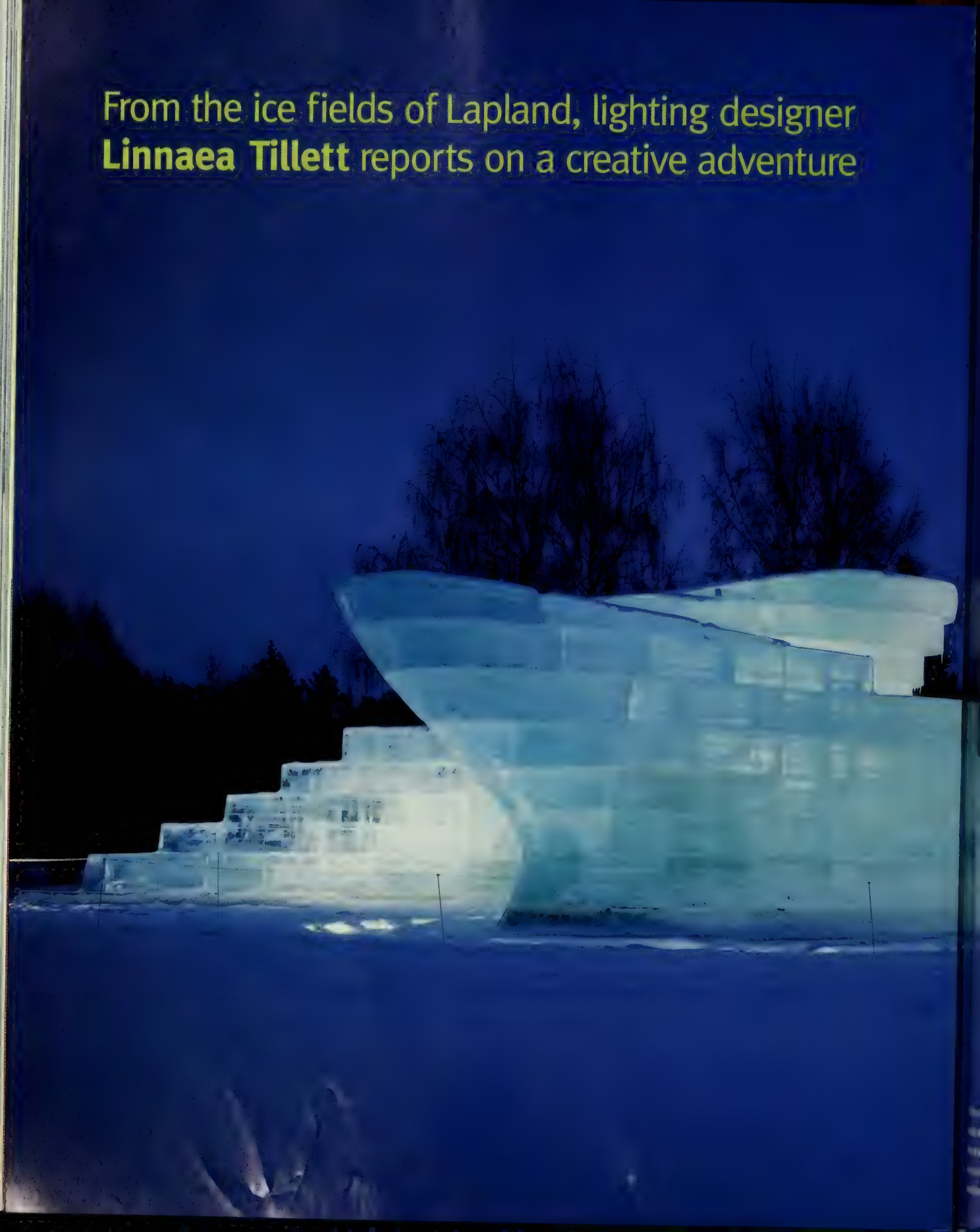
Charles Linn, FAIA





Last summer, visitors walking up the steps to Barney Allis Plaza in Kansas City passed through towers of brilliant, constantly changing color.

From the ice fields of Lapland, lighting designer **Linnaea Tillett** reports on a creative adventure



By William Weathersby, Jr.

An elliptical tunnel of ice designed by Tadao Ando flickered with embedded bands of digital LED numerals by artist Tatsuo Miyajima. Nearby in the ice fields of Rovaniemi, Finland, bordering the Arctic Circle, sat the shiplike prows of a work (part iceberg or ski jump, part shimmering green float) created by Zaha Hadid. At night, her twin landscape formations were set afire with alcohol by artist Cai Guo-Qiang, a Chinese pyrotechnical expert who called her extrapolation of the architect's structure *Caress Zaha with Vodka*. Ninety miles south in the port city of Kemi, Enrique Norten and Lawrence Weiner collaborated on a series of colored slabs of blue, green, and white ice that rose on the horizon like a Nordic Stonehenge. At this, *The Snow Show* exhibition held last February and March, 17 teams of artists and architects designed imaginative temporary structures. Volunteer Finnish engineering and architecture students wielded ice-thrashing chain saws in the subzero chill, constructing the works often beneath a canopy of heavy snow clouds. Local firemen began to resemble icicle-laden statues as they sprayed water to fill construction forms and the pondlike canvases of expression for the roster of international design talents. Clearly, this was no ordinary art event or design charrette.

The brainchild of Manhattan art gallery owner Lance Fung, *The Snow Show* was underwritten by the Finnish government and commercial sponsors to promote winter tourism. For the project participants, "it was the design adventure of a lifetime," says lighting consultant Linnaea Tillett, who teamed with architect Lebbeus Woods and artist Kiki Smith on a frozen pond that at night unveiled sylphlike figures floating amid threads of light. Tillett, in fact, was the lead project participant on-site to



At *The Snow Show* in Finland, Zaha Hadid designed a two-part installation of ice and snow that hovered like an ice-bound ship. Artist Cai Guo-Qiang added pyrotechnics.







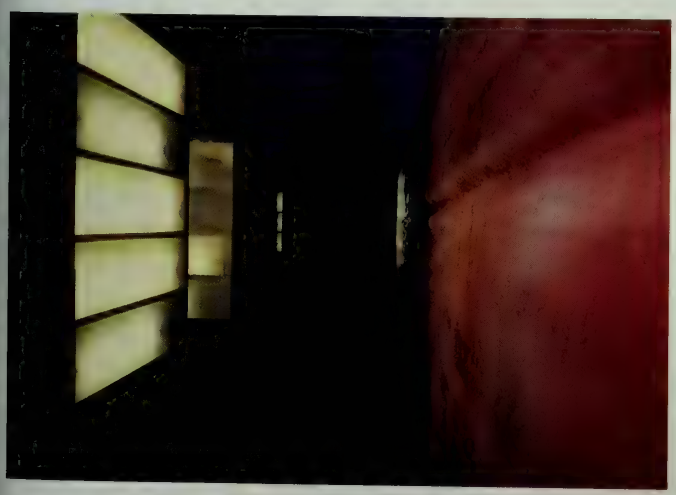






Like patterns incised by the blade edges of an ice skater, swirls of fiber-optic light (above) by Linnaea Tillett (left in inset at right, with aid Nicole Rauscher) give a work by Lebbeus Woods and Kiki Smith an added ethereal dimension. An ice tunnel by Tadao Ando (opposite, top left) featured integral LED numerals. Other works (opposite, right two and bottom; this page, below) were lit by the sun, LEDs, candles, or flaming liquids.

create the work. (Woods was unable to attend, and Smith arrived for opening night.) One of the only architectural lighting professionals onboard (some works relied on artists for illumination, which led to mixed results, including one piece that imploded from its too-hot interior lights), Tillett says the assignment helped her explore the difference between being a light artist and a lighting designer. "I developed a lot of new hands-on skills and technical insights," she says. It brought lessons in limits: of human physical endurance, product viability, and the natural properties of water and ice, not to mention the mercurial nature of Finnish winters. "The conditions were unusual," Tillett confirms. "Masking and electrical tape shattered in the severe temperatures, for example, so we resorted to sprinkling water with small cans as the 'glue' that held the fiber-optic cables in place as we were plotting the design."



The Woods/Smith/Tillett project entailed a network of 1,438 feet of side-emitting fiber-optic strands of various diameters sandwiched between layers of ice overlaid with Smith's stainless-steel figurative cutouts, all set within a man-made pond 60 feet in diameter. "Lebbeus's concept was an imaginary landscape appearing in an electrical universe," Tillett says. "Kiki introduced the mythological, narrative component, and I managed the technical, production, and installation elements."

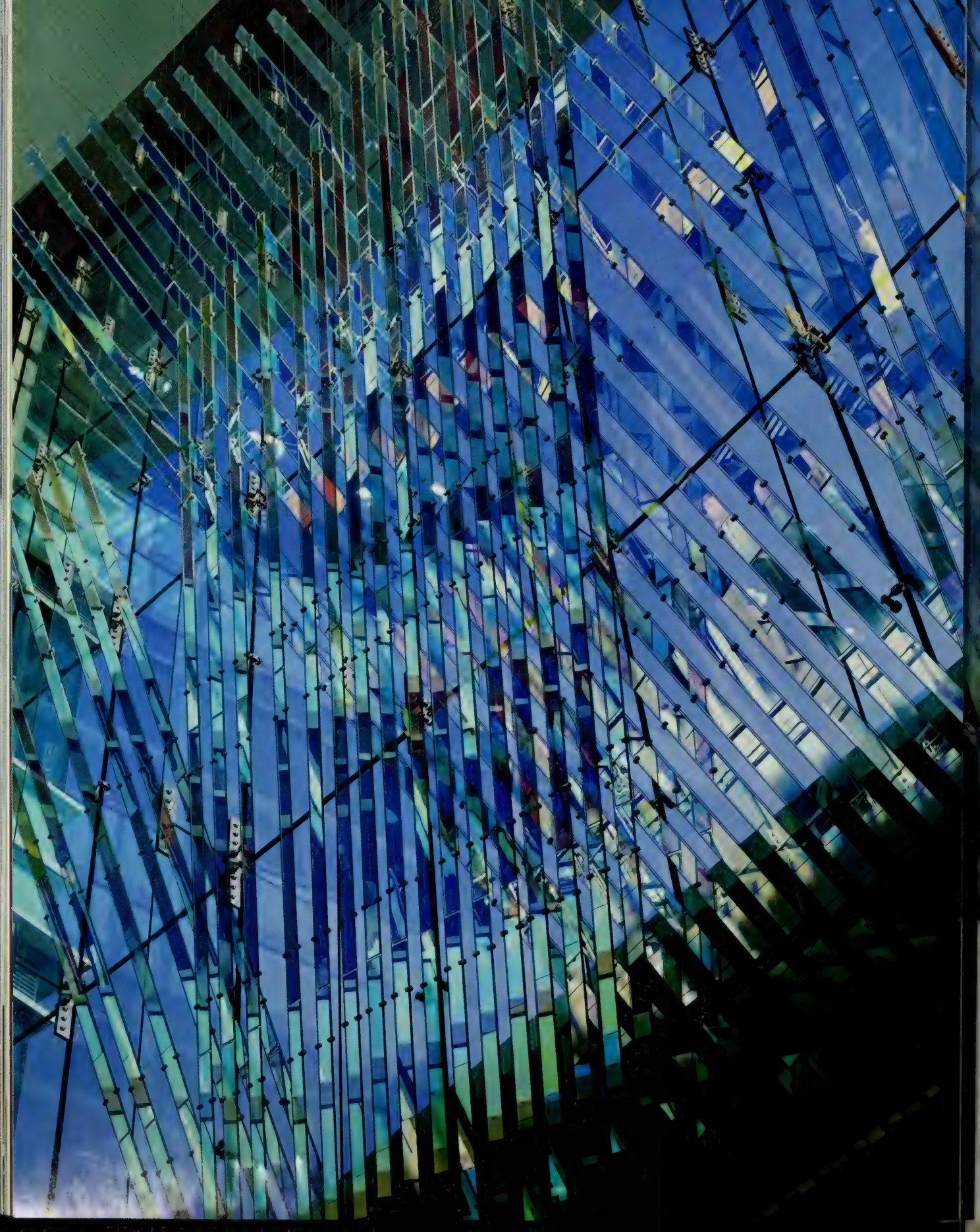
"It was important to all of us that the work invite participation and could be explored, even walked upon," she continues. "There was no one special viewing position, so every visitor experienced it differently."

"Lapland was a brutal environment, but unspeakably beautiful," Tillett says. "If you are passionate about your work, cold doesn't seem to penetrate the same way it does when you are bored or alienated." ■

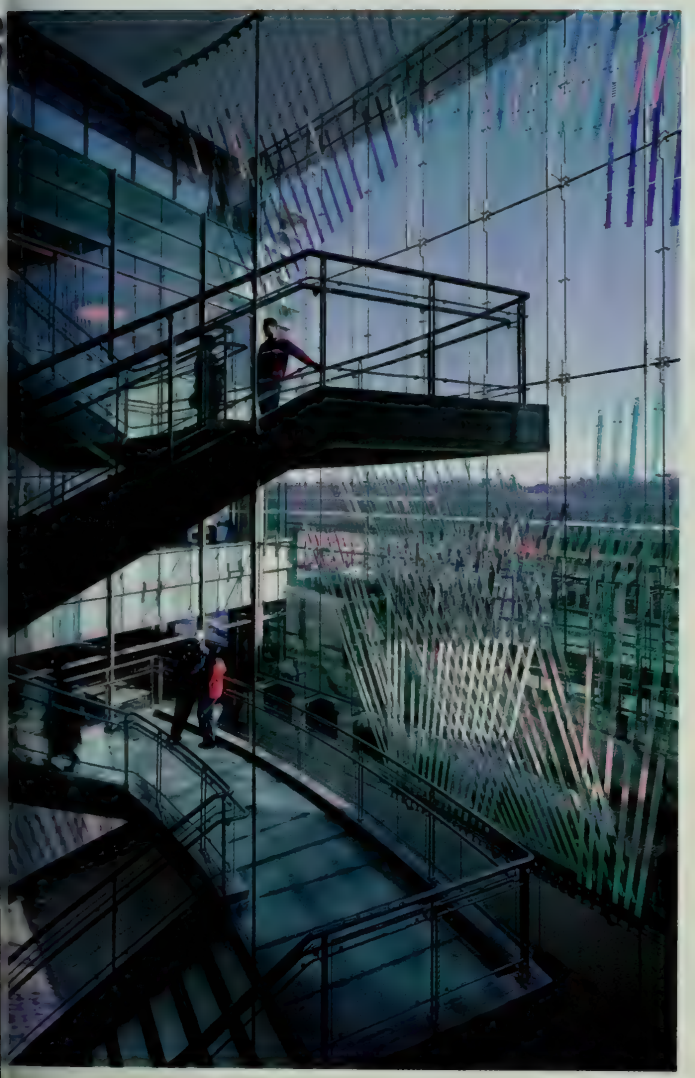
Project: The Snow Show, *Kemi and Rovaniemi, Finland*
Architects: *For a complete roster of architects, artists, and consultants, go to www.thesnowshow.net*
Lighting designer, project coordinator, Lebbeus Woods project: *Tillett Lighting Design—Linnaea Tillett, Seth Tillett, designers; Nicole Rauscher, Sevren Clay, project team*
On-site volunteers: *Stefan Cornelus; Jessica Sledge; Deidre Greaney*

Sources
Fiber optics: *ROBLON*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



Artist **Ed Carpenter** manipulates daylight and electric light to spark his site-specific architectural works



Ed Carpenter's 60-by-36-foot *Light Veil* installation at the main public library in Memphis (opposite and above) offers a constantly changing array of color and shadow. The artist at work (above right).

(ABOVE AND OPPOSITE): COURTESY ED CARPENTER (RIGHT)

By John Peter Radulski

Breath of Light sums up Ed Carpenter's philosophy of working with illuminated glass-and-metal sculpture as his artistic medium; it's also the title of the monograph about his body of work (l'Arca Edizioni, 2000). Since 1973, Portland, Oregon–based Carpenter has completed more than 75 projects encompassing pedestrian bridges, interior and outdoor architectural sculptures, and stained-glass windows for a variety of public, corporate, institutional, and ecclesiastical clients. The cohesive element in such a broad body of work is an exploration of how light—whether daylight, electrical illumination, or a combination of the two—affects the built structure it falls upon, passes through, or radiates from.



Carpenter points to his study of stained-glass artisanal history and hands-on experience with that craft as the genesis of his interest in the effects of light. While studying at the University of California, Berkeley, between 1968 and 1971, he became acquainted with a local stained-glass artist and later traveled to Europe to further explore the medium in apprenticeships with English and German masters. His evolution from a stained-glass artist—by his estimate, his first decade's worth of commissions were in that medium—to a more versatile artist who now designs a variety of installations was prompted by a growing curiosity about how light can be manipulated to create "a game of layering and texturing, obscuring and revealing, and allowing the movement of shadows and light patterns to animate a room, a wall, or a courtyard." Similarly, magnification, filtration, and the addition of kinetic elements extend the artistic possibilities, he says.

Many of Carpenter's later works, including a sculpture completed in 2001 for the main public library in Memphis, employ dichroic glass, a material created by applying thin layers of metallic oxides such as titanium, silicon, and magnesium to the surface of the glass in a high-temperature, vacuum furnace. These coatings transmit varying wavelengths of light while reflecting others, so that when viewed from even slightly different angles, various colors are visible. For the library, designed by Looney Ricks Kiss Architects in 1997, Carpenter was commissioned to install a sculpture in the 80-foot-high main atrium enclosed by a curtain wall of glass on the building's east side. His *Light Veil* measures 60 feet high by 36 feet wide and incorporates stainless-steel cables and hardware, aluminum armatures, and laminated dichroic glass. Visible from within many areas of the library, as well as through the eastern facade, the sculpture's colors and actual shape are perceived differently

John Peter Radulski is a writer and design consultant based in Westport, Conn. He studied art history at Vassar College and the Clark Art Institute.





depending on the location of the viewer and the intensity of the natural and electric light that passes through or is reflected off the overlapping layers of glass.

Carpenter explains his design process as deductive, letting the specifics of a site inform the installation. In Memphis, an open flight of stairs that connects levels had a highly sculptural presence, so he didn't want to compete with it visually, he says. The building's expansive glass curtain wall also provided Carpenter with a ready-made boundary for his proposed work. The result offers an expression of light that didn't need to overwhelm the stair atrium, he says, adding that central to all of his works is a desire "to create uniquely powerful spaces."

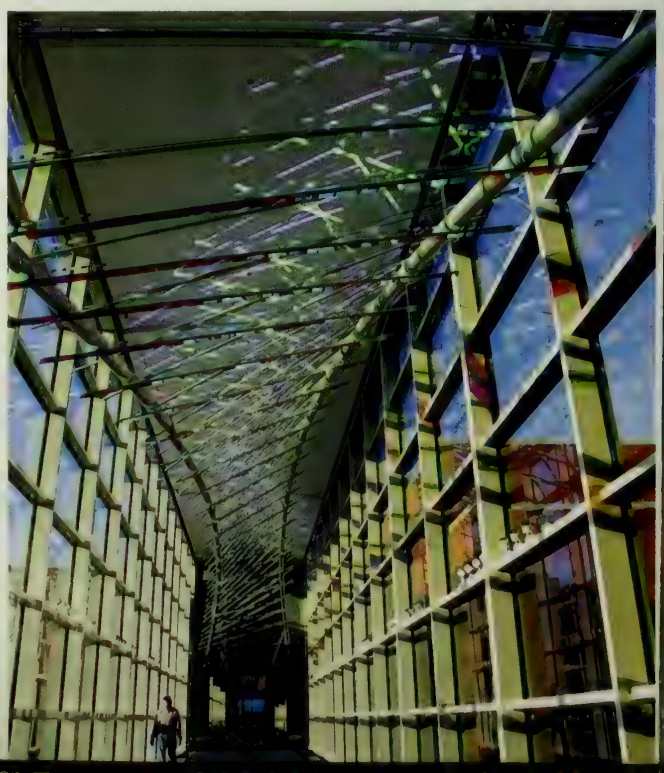
At the Dallas Convention Center, *Lightstream* engages event-goers traversing the 800-foot-long corridor that links entrances to the

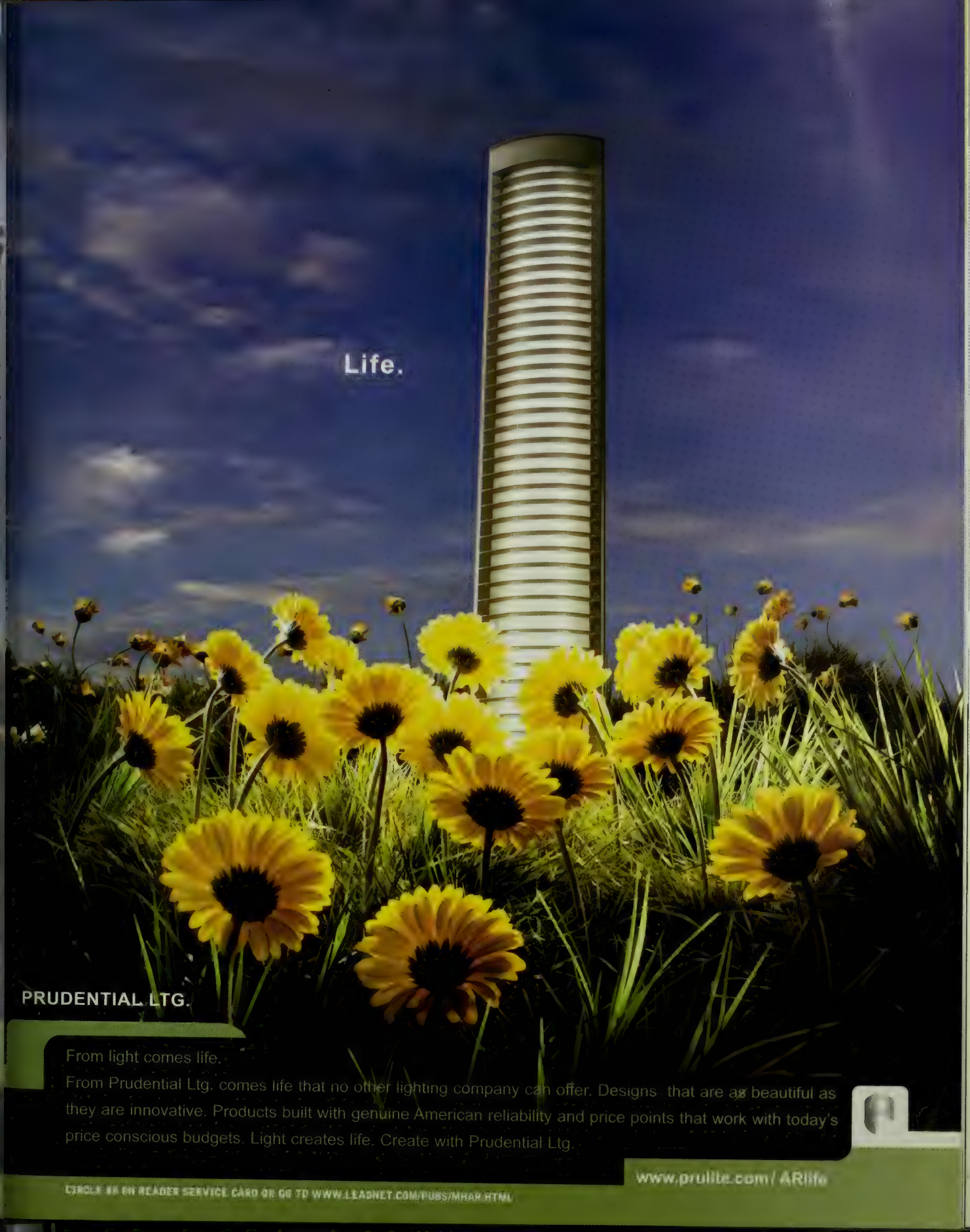
THE GRANDSON OF A SCULPTOR/PAINTER AND THE STEPSON OF AN ARCHITECT, CARPENTER BRIDGES THEIR TWO FIELDS.

many meeting rooms and halls. While the suspended "light sticks" are illuminated to add "a sense of coolness in the hot Dallas climate," Carpenter says, the lamping is set on microprocessors so that it can be electronically controlled. The normal daytime program creates visual waves of color that wash from one end of the hall to the other—and at times meet or cross in the middle. The lamping can also be programmed as a subtle way-finding system indicating, for example, that there is certain activity occurring in one particular part of the center.

With a full-time staff that includes Carpenter, studio assistant Oanh Tran, and office manager Arleen Daugherty, the artist has also established a circle of consultants, fabricators, computer modelers, and

Carpenter created *Light Wings* for the north concourse of the Houston International Airport in 2001 (above two). A pedestrian bridge links two components of the Richmond Convention Center in Virginia (below).



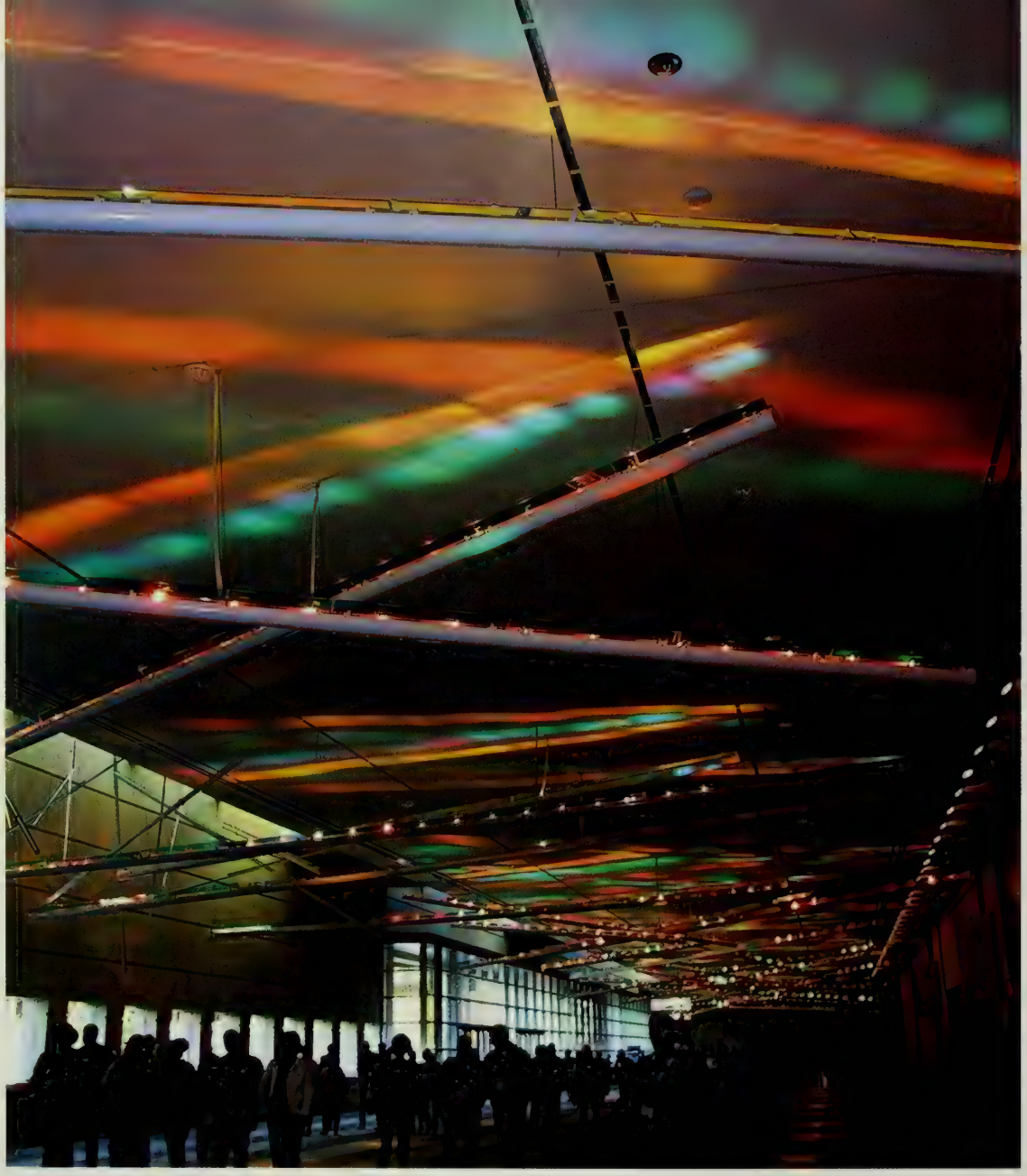


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Scores of dichroic "light sticks" are arranged along an 800-foot-long path in *Lightstream*, at the Dallas Convention Center (left), 2003.

others that help facilitate design and installation. Widely known as an eager and open-minded collaborator and technical innovator, Carpenter carries on a cross-disciplinary family legacy: His grandfather was a painter/sculptor and his stepfather an architect. In the works are projects in Taiwan, Honolulu, and California that, like Carpenter's previous commissions, will be spatially complex, graceful, and undoubtedly grand. ■

Project: *Central Memphis Library*
Architect: *Looney Ricks Kiss Architects*
Engineer: *KPFF*
Glass fabrication: *Haefker O'Neill Studio; Standard Bent Glass*
Metal fabrication: *Albina Pipe Bending*

Project: *Houston International Airport*
Architect: *Gensler, Houston*
Lighting designer: *Bos Lighting Design*
General contractor: *Caddell*
Glass fabrication: *Haefker O'Neill Studio; Standard Bent Glass*
Metal fabrication: *Albina Pipe Bending*

Project: *Richmond Convention Center*
Architect: *TVS, Atlanta; SMBW, Richmond*
Lighting consultant: *Craig Marquardt*
Lighting control system: *ETC/Barbizon*
Metal fabrication: *Haefker Studio*
Art consultant: *Jacqueline Holmes*

Project: *Dallas Convention Center*
Project manager: *John Rogers*
Architect: *SOM, Chicago; HKS, Dallas*
Lighting consultant: *Craig Marquardt*
Lighting control systems: *ETC/Barbizon*
Metal fabrication: *Albina Pipe Bending*
Glass fabrication: *Haefker O'Neill Studio.*

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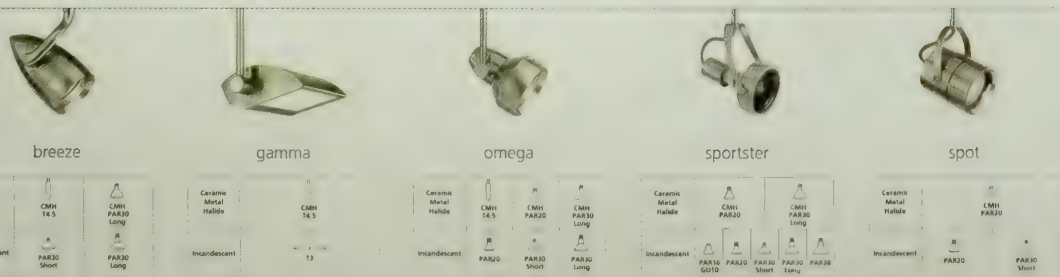
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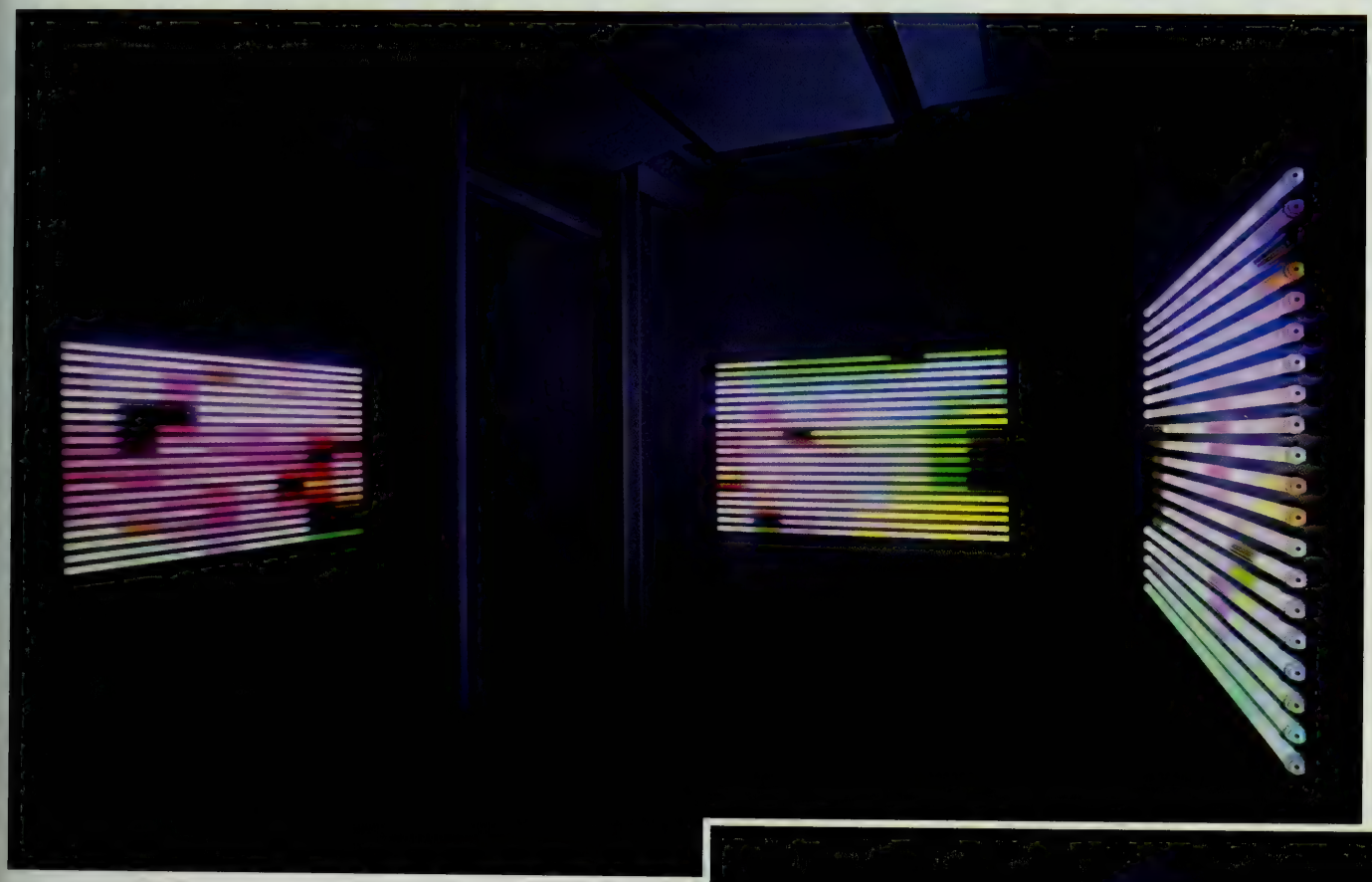




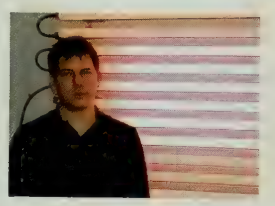
TECH Lighting

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The hypnotic light sculptures of **Leo Villareal** are precedent-setting for architectural design

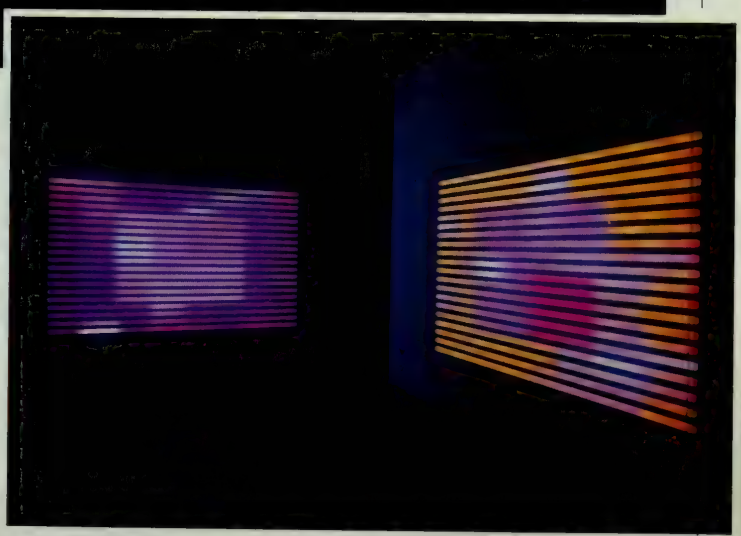


By Sara Hart

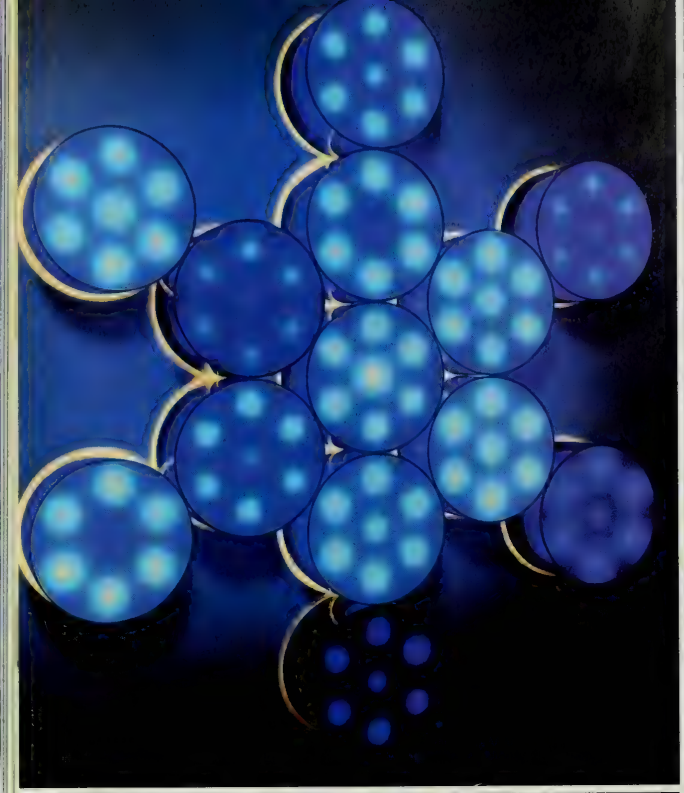


Light as the primary medium, not just a component, of art has been on the fringe historically, due in large part to technical limitations and its ephemeral nature, compared to the ductile mediums typically associated with sculpture and painting. Dan Flavin pioneered sculpting with light in the 1960s with his Minimalist fluorescent-tube compositions. More recently, James Turrell's mood-altering neon environments have made him the darling of the architectural vanguard. Yet in architecture as well, light traditionally plays a functional and, therefore, a supporting role in all but the most theatrical designs.

The technological innovation that precedes commercial application often finds its way onto the artist's palette. Advances in light-emitting diodes (LEDs) represents one development with great promise. In a recent exhibition at the Sandra Gering Gallery in Manhattan, New York light sculptor Leo Villareal (www.villareal.net) displayed three wall-mounted light sculptures constructed of horizontal tubes containing thousands of



Chasing Rainbows **is an installation of 60 tubes arranged horizontally in three groups of 20. Villareal (left) programmed deep, shifting, virtual spaces within a matrix made up of thousands of full-color LEDs.**

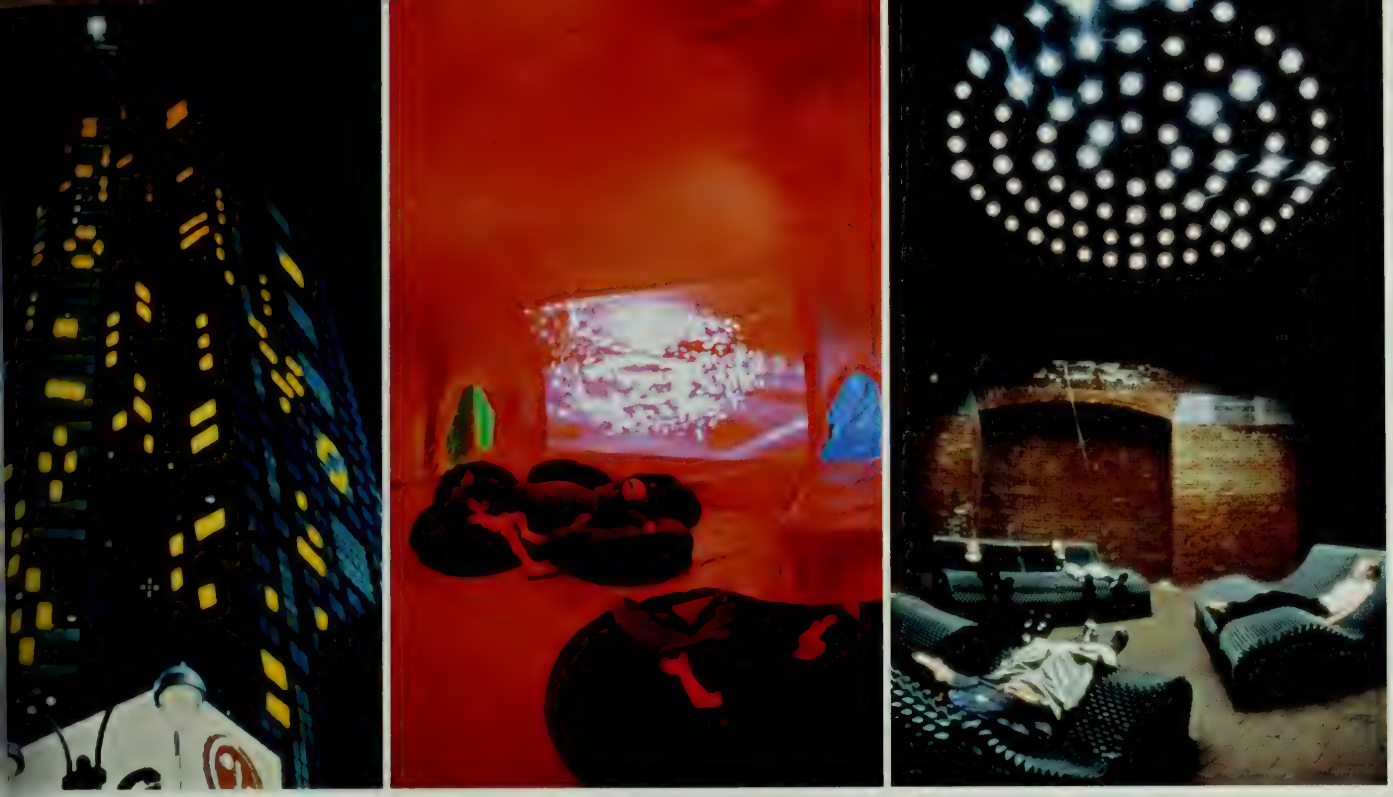


Villareal's work varie
wildly in scale from
interiors such as *Syn*
(opposite, middle), a
interactive perform-
ance piece created
with other artists, an
Firmament (opposite
right), a strobe ceilin
display viewed on ze
gravity foam sofas, t
large flashing displa
on building facades
(opposite, left).

Villareal's experiments in light are varied. The pulsating white light of a gallery installation called *Metatron* (above) quietly recalls phosphorous in the ocean; flickering colored lights beckon pedestrians into a gallery (right). In contrast, *Supercluster* (below), the LED matrix covering the facade of P.S. 1, investigates complex light-programming issues.







full-color LEDs, which, although based on only green, blue, and red, gave the artist a palette capable of producing an astonishing 16 million color combinations.

With solid-state semiconductors as pigment, Villareal created a virtual reality more spatially complex and radiant than is typically associated with kinetic art. As the viewer is absorbed into the matrix, the horizontal tubes dissolve, and the darting shapes emerge as architectural forms. The mind begins to concentrate on the rhythmic ebb and flow of the forms and patterns, looking for repetition—some evidence of a loop—that would provide a narrative to the story. One can stand and observe the installation for hours and not find a way out, but the journey is thrilling.

HE MOVES BACK AND FORTH FROM COMPUTER SIMULATION TO PHYSICAL MOCK-UP, TWEAKING THE DESIGN.

Villareal works much like an architect, first conceptualizing on the computer with software he writes. As with the design of buildings, the process is iterative. He moves back and forth from computer simulation to physical mock-up, testing and tweaking the design until all issues are resolved. This process is important in his site-specific commissions in which architectural scale becomes a critical component. *Supercluster* is a 45-by-120-foot matrix of 640 LEDs, which envelops the facade of the P.S. 1 Art Center in Queens, just across the river from Midtown Manhattan. Mounted on scaffolding attached to the south facade, the structure is ordered by a grid within which light animations are governed by what is known as cellular automata, a closed system in which grid cells evolve in relation to neighboring cells. Hence, the cells take on a life of their own, "living and dying" according to the rules of the matrix.

The artist's own evolution began with work in set design at Yale. "I eventually ended up in the sculpture department and realized I could do the same thing I was doing, but didn't need plays, directors, or actors," Villareal explains. "I worked with light, sound, and video, finding site-specific locations for installations." Later, he went on to New York University's Interactive Telecommunications Program (itp.nyu.edu), a pioneering department in the Tisch School of the Arts for the study and design of new media, computational media, and embedded computing. Here, he learned the programming skills that now enable him to push LED technology far past familiar commercial applications, such as embellishment of commercial space and the transformation of facades into animated advertising and infomercial billboards.

It would benefit architects and engineers to consider the experiential and spatial potential of Villareal's work. There are a handful of precedents that prove genuine collaboration between lighting designers (if not artists) and architects can happen with neither being compromised, but the potential for innovation in space-making and facade design is far from fully realized. Villareal is taking a step in that direction with a commission to create a light sculpture for a new federal courthouse in Texas, which is now in design development by Antoine Predock. If design influence can flow in both directions here, then light may emerge as a true building material. ■

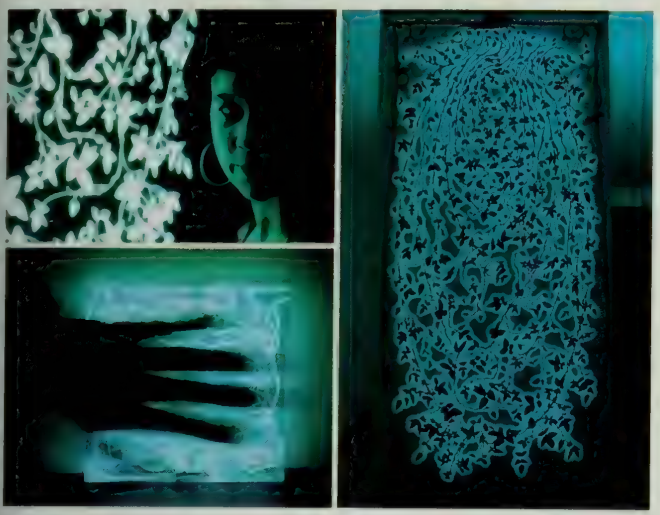
Project: Supercluster, *as part of* Signatures of the Invisible.
Client: *P.S. 1 Contemporary Art Center; Antoine Guerrero, director of operations; Cornelia Tischmacher, project manager*

Project: Chasing Rainbows, *three wall-mounted light sculptures constructed of horizontal tubes containing thousands of full-color LEDs*
Location: *Sandra Gering Gallery, New York City*
Lighting equipment: *Color Kinetics*

For more information on this project, go to Projects at **www.architecturalrecord.com**.


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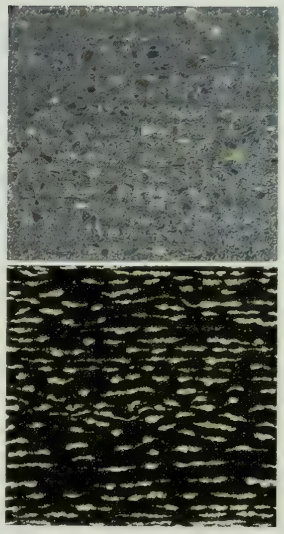


▲ Light sources for cloudy days

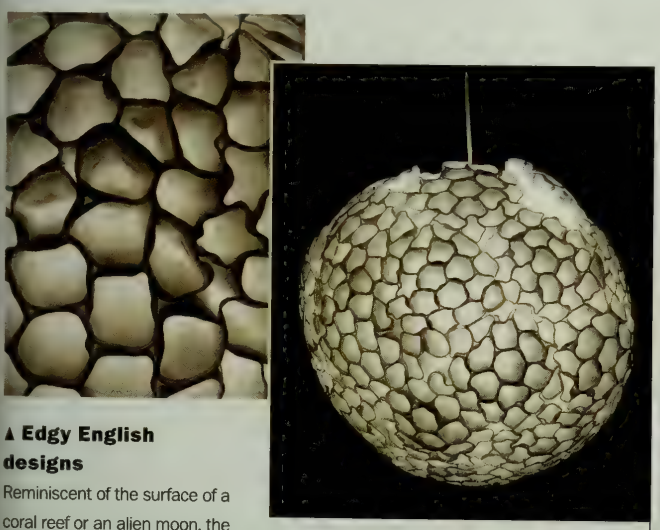
Loop was established last year by Royal College of Art graduate and textile designer Rachel Wingfield. Based in London, Wingfield creates reactive, luminous surfaces and objects by applying electronics and display technologies onto textiles and interior surfaces. Wingfield's key interest is how light can be applied to relieve the suffering of those with SAD, or seasonal affect disorder. Wingfield launched Digital Dawn, a reactive window lamp (right)), at last year's 100 Percent Design in London. Digital Dawn illuminates in response to its surroundings—the darker a space becomes, the brighter the blind glows, maintaining a balance in luminosity. Loop, London. www.loop.ph **CIRCLE 200**

▼ Light-transmitting concrete

Concrete has never been a material admired for its ability to transmit light—until now. Inspired by an art piece that featured concrete embedded with glass, Aron Losonczi, a young Hungarian architect, has invented LitTraCon, a translucent concrete building block that combines the material with thousands of optical fibers that run side by side between the two main surfaces of the block. According to Losonczi, the blocks are load bearing, provide the same effect with both natural and artificial light, and have the same strength and qualities as common concrete blocks. The blocks are currently undergoing testing. LitTraCon, Aachen, Germany. www.litracon.com **CIRCLE 201**





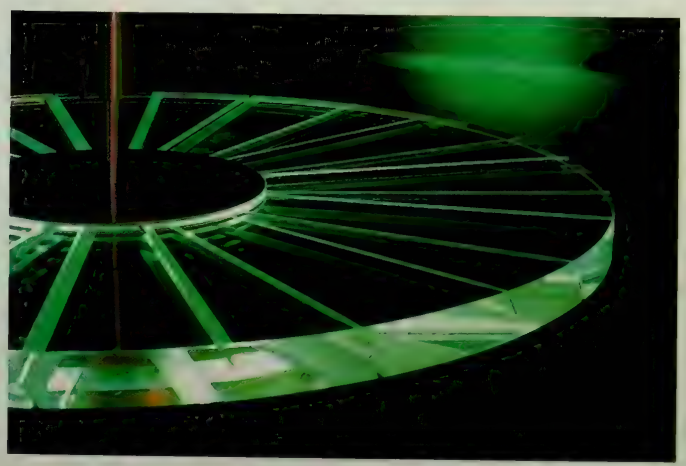


▲ Edgy English designs

Reminiscent of the surface of a coral reef or an alien moon, the Styrene lamp by designer Paul Cocksedge recycles an everyday object—the polystyrene cup—into an otherworldly light diffuser through the careful application of heat to the material. The Styrene pendants come in three sizes and will be produced in a series of lampshades. Cocksedge is one of four designers short-listed to win at the *Designer of the Year* exhibition currently at London's Design Museum. At the Bombay Sapphire exhibit at last month's Milan Furniture Fair, he introduced a lamp that exposed a glass fixture containing Bombay Sapphire and tonic to UV light, creating a blue glowing effect. Paul Cocksedge, London. www.paulcocksedge.co.uk **CIRCLE 202**

▼ A slice of light

All four members of the architecture and product design firm Liuhta studied together at the Technical University of Darmstadt in Germany, where they went on to practice in firms around the world. Liuhta has developed ambient and direct lighting in materials including Perspex acrylic, stainless steel, aluminum, and LEDs. The Segment ambient pendant light, shown below, is height-adjustable and features Perspex, stainless steel, and white and green LEDs. It measures 1' in diameter and 1" in height. Liuhta Architektur und Design, Darmstadt, Germany. www.liuhta.com **CIRCLE 203**

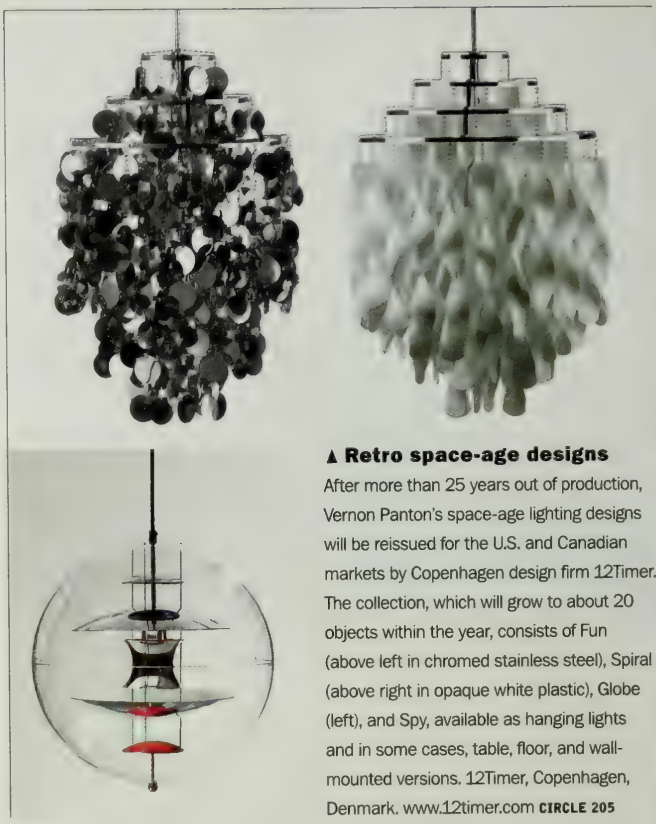


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Lighting Products Sculptural Lights



▲ Sea of lights
The eerie luminescence of a school of jellyfish is captured by Dutch designer Dirk Rutten through his Jelly-Lights light sculptures. Developed with a proprietary process, the fixture's polycarbonate shell is bonded with a special heated liquid to a series of fiber-optic strands. The light's energy-efficient MHR 150-watt projector comes with an optional color wheel to create custom color scenes and can be placed a maximum of 26' away from the fixture. Jelly-Lights is produced in four sizes: 5', 6½', 8', and 10' in diameter, while custom sizes and shapes (including leaves and birds) can be designed on request. NXT Light, Neunun, the Netherlands. www.nxtlight.com **CIRCLE 204**



▲ Retro space-age designs
After more than 25 years out of production, Vernon Panton's space-age lighting designs will be reissued for the U.S. and Canadian markets by Copenhagen design firm 12Timer. The collection, which will grow to about 20 objects within the year, consists of Fun (above left in chromed stainless steel), Spiral (above right in opaque white plastic), Globe (left), and Spy, available as hanging lights and in some cases, table, floor, and wall-mounted versions. 12Timer, Copenhagen, Denmark. www.12timer.com **CIRCLE 205**

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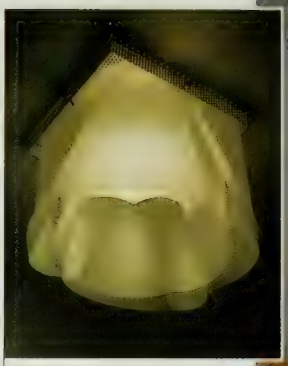
Lighting Products Sculptural Lights

▼ Reflecting light, projecting sound

Combining both light and sound, ViroSphere is the world's first outdoor IP65 loudspeaker based on NXT technology, according to Martin Architectural. Tested to withstand all types of weather, ViroSphere loudspeakers double as light reflectors and are manufactured from a fully UV-protected, full-colored polycarbonate material.



The system consists of two oval-shaped panel speakers mounted on a slim post and illuminated by two Martin Exterior 200 CMY color changers. Martin Architectural, Sunrise, Fla. www.martin-architectural.com **CIRCLE 206**





▲ Shade sculpting

Brave Design's award-winning FLX series of light fixtures is defined by a semirigid, diffusible polycarbonate sheet that can be twisted into different shapes. The shade on the FLX 100 table fixture and FLX 200 floor fixture has at least nine ways to be assembled and placed on the nickel-plated steel stand (four options shown above right). If this offers too much freedom of choice for the client, specifiers can have the shades preconfigured by Brave Design. The FLX 300 pendant (left) comes with the option of three preconfigured shades in two shade sizes. All fixtures use recyclable materials and low-energy compact fluorescent lamps. Brave Design, Montreal, Canada. www.bravedesign.ca **CIRCLE 207**

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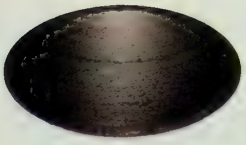


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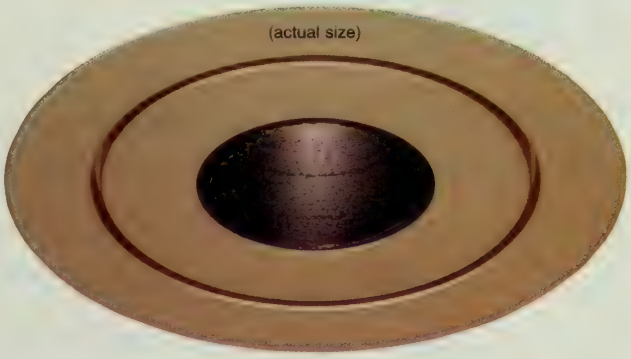
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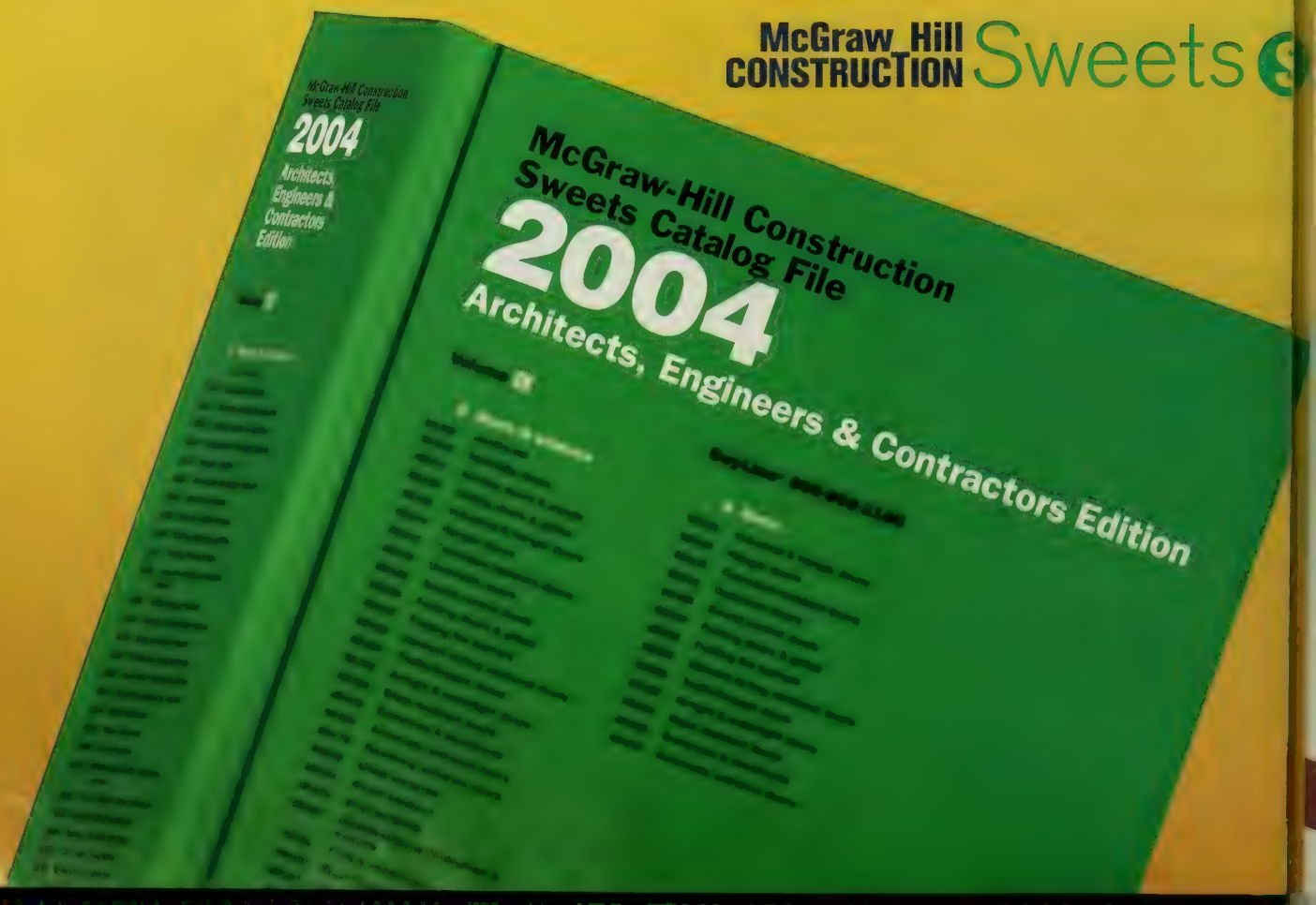


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Products

Landscape Furnishings

Made of materials ranging from teak to polypropylene, **landscape furnishings** for cities, parks, and private spaces need to withstand the elements as well as heavy-duty client needs. For the latest outdoor products, check out the ASLA's Annual Meeting & Expo held from 10/29–11/2 in Salt Lake City. *Rita F. Catinella*

Lightweight and lighthearted outdoor furniture

The Take 5 outdoor furniture collection is a major introduction from Landscape Forms that will partner the company's award-winning standard collection of outdoor commercial furnishings. The offspring of several international design studios, including Marco Maran, Philippe Starck, T. Yoshino, and Dominic Symons, Take 5's seating, table, and planter line is intended to offer solutions for a variety of commercial outdoor and indoor spaces, including restaurants, entertainment venues, corporate and university campuses, and hospitality and health-care environments. Most of the products feature molded polypropylene, while chair legs are made of stainless steel or aluminum, and the Yummy table top and Cheap Chic table base are made of stainless steel. Landscape Forms is offering a Take 5 "test drive," allowing specifiers to try the line for 30 days before buying. The entire collection is offered with a one-year warranty for outdoor use, and since they are warehoused in Michigan, most orders will ship within 48 hours. For more information on Landscape Forms' new white paper on environmental design trends, see this month's Product Literature, page 228. Landscape Forms, Kalamazoo, Mich. www.landscapeforms.com

CIRCLE 208



Cheap Chic bar stool, Philippe Starck (left); stacked So Happy chairs, Marco Maran (center); Quadra planters (right).

Curvaceous collection of teak furnishings

Diamond Teak's award-winning Spirit Song collection of outdoor furniture is made of solid plantation teak from Costa Rica, where the company has planted tens of thousands of native trees certified by the Forestry Stewardship Council. Designed by Barbara and Robert Tiffany, the line of benches, chairs, and tables features thin, parallel teak beams that are joined by stainless-steel rods and arranged in undulating patterns that provide balance while maintaining the illusion of fluidity. The pieces can be used indoors as well as out, and the benches can be made in different lengths and ergonomic shapes, including compound-curve or S-curve benches, long backless benches, and reverse-curve benches. The benches have been used in such projects as Battery Park in New York City and the Barney's Show Store in Hollywood, California, where Diamond Teak manufactured custom backless benches measuring 3' wide by 8' long. Diamond Teak, Sellersville, Pa. www.diamondteak.com

CIRCLE 209



A side view of the Spirit Song table.





Improved city-scape furnishings

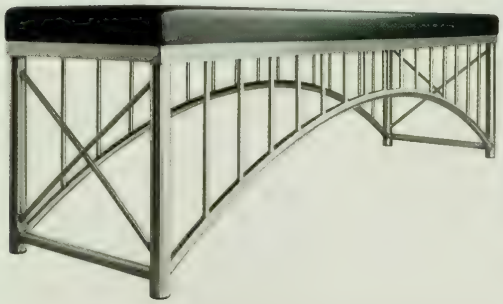
Citizens of New York City and Washington, D.C., will soon see a change in the street furniture that is a familiar part of their surroundings. In January, New York City announced an international competition for a new design for the more than 300,000 streetlights (above) within its five boroughs; a winner is to be announced on October 15. The city is also expected soon to release an RFP for an updated design for city-owned bus shelters and newsstands (top). Washington, D.C.'s transportation department issued an RFP for a bus-shelter program in March. Toulla Constantinou, North America C.E.O. for the street-furniture manufacturer Cemusa, plans to compete for both proposals. "I feel that cities are finally waking up and improving their designs," she says. "They are not simply utilitarian as they used to be." *R.F.C.*

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▼ Turtle-friendly lighting, cushioned bench

Triada, the newest addition to Forms+Surfaces standard lighting product line, was designed and developed for the City of Miami Beach, Florida. The fixtures needed to integrate with the nautical environment as well as manage light output with directional shields to protect the local turtle habitat from light pollution. The company has also recently added an upholstered seat to their Bridge Bench site-furniture line. Forms+Surfaces, Carpinteria, Calif. www.forms-surfaces.com **CIRCLE 210**





▼ Outdoor furnishings to stand the test of time

Recalling an era when gardens became the center of leisure, the Sienna collection of armchairs, chaise longues, and table settings are made of Hularo hand woven on a powder-coated aluminum frame. Developed in Germany, Hularo is a polyethylene material that is tear- and splinter-proof and resistant to chlorine, saltwater, tanning creams, food stains, and UV rays. Henry Hall Designs, San Francisco. www.henryhalldesigns.com. **CIRCLE 212**



► Give passersby a double take



Double Visions has introduced large custom-designed screens made with high-quality photographic prints. The screens are designed to serve as wind barriers, to hide unsightly areas such as construction sites, to enclose a pool or parking lot, or to beautify facades of buildings and retaining walls. Twenty of the screens, printed with images of sculpted hedges, have been installed along a street in the city of Amsterdam (above). Double Visions, Murrieta, Calif. www.doublevisions.com **CIRCLE 214**

▼ Holler than other tables and benches

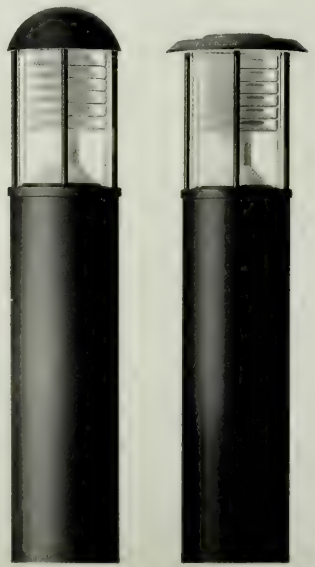
British designer Michael Young has trained with Tom Dixon and worked for world-class companies such as Cappellini, Magis, and Sawaya & Moroni. Tölt, his new outdoor-furnishings offering for Extremis, combines the "classic" material of acacia wood with a "high-tech" tabletop made of Corian. The wooden table legs feature a 70s and 80s retro feel, while the perforated Corian top allows for easier drainage and cleaning. Tölt is available in a round table with low stools or a rectangular table with matching benches. Ideas for Living, Albuquerque, N.M. www.extremis.be **CIRCLE 211**





▲ Fountain of youth

The historic Albuquerque High School in east downtown Albuquerque has been transformed by the local firm of Dekker/Perich/Sabatini into an urban center that includes loft living surrounded by a campus area and retail shops. The project also features a new public-fountain system designed with 19 smooth-bore nozzles and LED lights installed in a concentric layout pattern flush to the finished concrete deck. The spray heights are staggered in a "wedding cake" fashion with a higher center and lower outer tiers. Roman Fountains, Albuquerque, N.M. www.romanfountains.com **CIRCLE 213**



◄ Glare-free bollards

HessAmerica's new Valencia and Montego bollards complement the company's existing pole and wall-mount Designer Series models. Heavy-duty 7" diameter steel shafts provide a sense of security, while interior baffles direct light output to the walkway and eliminate glare. Valencia is capped with a heavy-cast steeped roof, while Montegro features a smooth dome roof. Both utilize either HID or compact fluorescent lamps for a variety of applications. A selection of finishes is available. HessAmerica, Gaffney, S.C. www.hessamerica.com **CIRCLE 215**



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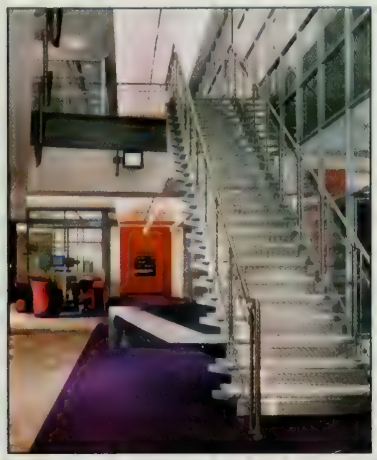
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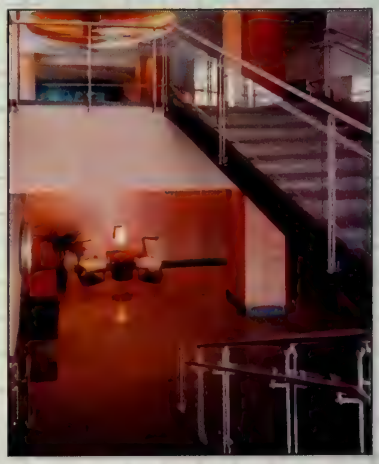
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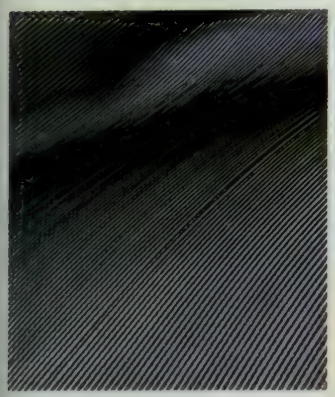
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Product Briefs





▲ Upholstery with lungs

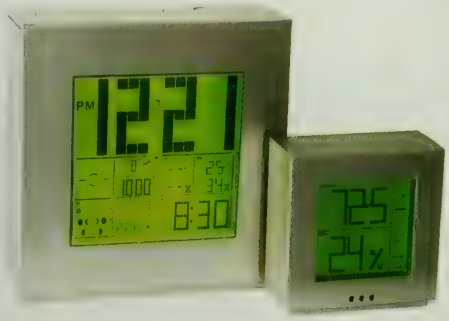
In collaboration with Dutch designer Ferdinand Visser, Designtex has launched an unusual collection of breathable fabrics that feature the proprietary Airco System that allows for air circulation and ventilation between pressure points. The first two designs of these structured fabric systems are In Space (right) and Drizzle (left). In Space features a crisp, chenille-like strip that floats on clear supportive threads above a contrasting color background. Drizzle's thinner rib style was a result of experimenting with the In Space fabric structure. Designtex, New York City. www.dtex.com **CIRCLE 216**



Product of the Month Nippura Blue Ocean

If you've ever felt like you were watching a movie when looking at the exotic world on the other side of an aquarium tank, imagine looking at a flat-screen simulation of an aquarium and having the opposite feeling. The aquarium experts at Nippura have mastered such an illusion with the Blue Ocean rear-projection screen. Providing a 3D portrayal of digital video and graphics, and asymmetrical projection for viewing from both sides simultaneously, the Blue Ocean screen is finely cast in a high-grade acrylic between two ultra-clear, optical cell-cast-acrylic panels. Because the actual image plane is not on the surface like typical screens, it is practically impossible to scratch or damage. With standard sizes measuring 72", 84", and 100" in length (at a 16:9 ratio), and cinema models as big as 340' possible (at a 21:9 ratio), the system offers the largest seamless sizes in the world. Ocean Blue can be used in full outdoor weather conditions, as well as large-scale pool/aquarium applications, and it can be custom ordered for curved or all-encompassing hemispherical simulation screens. U.S. Nippura, Charlotte, N.C. www.usnippura.com CIRCLE 217

► It was a dark, stormy night ...



Need to know if you should bring an umbrella? Why turn on The Weather Channel when you can check Philippe Starck's new Time/Weather station, developed with Oregon Scientific. The four models in the collection may include a radio-controlled clock with an LED backlit readout of barometric pressure, moon phases, date, indoor and outdoor temperature, or humidity. An image of the current time and alarm status can be projected onto the ceiling of a dark room. MoMA Design Store, New York City. www.oregonscientific.co.uk **CIRCLE 218**



▲ Bonfire night revisited

Landscape artist and sculptor Elena Colombo has developed a line of outdoor gas "firebowl" features for clients including hotelier André Balazs, who commissioned firebowls for two hotels and his private residence. The firebowl is a 4' to 15' diameter sculpture fabricated in steel, bronze, copper, stone, or colored powder coat and fitted with a 300,000-BTU burner connected to propane or natural gas. Colombo Construction, New York City. www.firefeatures.com **CIRCLE 219**



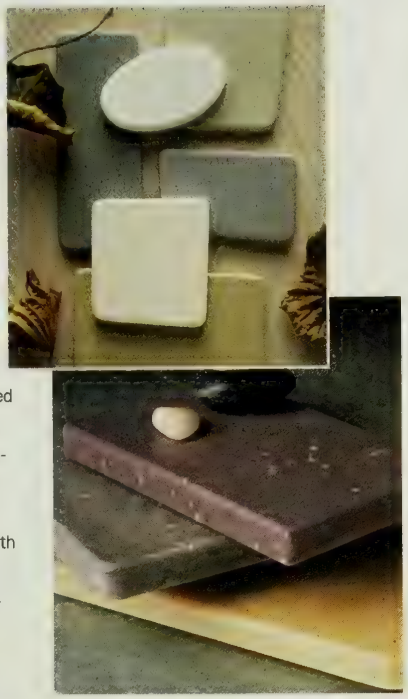
◄ Cement-based, ecofriendly materials

Coverings Etc. offers Eco-Cem and Eco-Terr, two ecofriendly product lines that can help earn LEED points for projects. Eco-Cem (bottom) is made from 20 percent wood pulp and 80 percent cement. It comes in six colors, in sizes measuring 4' x 10' or 4' x 8', and ranges in thickness from ½" to 1¼". Eco-Cem is for flooring, countertops, or wall surfacing for industrial, commercial, and residential use. Eco-Terr slabs and tiles (top) can be color customized and contain 80 percent materials using stone chips sourced from quarries near the manufacturing plants, recycled glass, and a natural cement binder. Coverings Etc., Miami, Fla. www.coveringsetc.com **CIRCLE 220**

Product Briefs

► The beauty of imperfection

Corian's six new colors were influenced by the Japanese aesthetic of "wabi-sabi"—based on the concept that there is beauty in nature's imperfections. Understated tones and textures and a random scattering of particles gives the colors, featuring organic names such as Green Tea, White Jasmine, and Rice Paper, a slight patina and weathered look (top). Also inspired by the wabi-sabi aesthetic is Dupont's top-of-the-line Private Collection. The collection's Artisan series (bottom) features bold background colors with multitone, feathery veining and is embedded with medium-size particles. Dupont Surfaces, Wilmington, Del. www.corian.com **CIRCLE 221**



► Marbleous choices

Cosentino, a Spanish company that has been quarrying, fabricating, and marketing marble for three generations, is launching a new line of marble in the U.S. The natural stone collection will include more than 20 colors in several finishes and formats. The fireplace and flooring shown here features Negro Marquina marble. Cosentino USA, Stafford, Texas. www.marmolescosentino.com

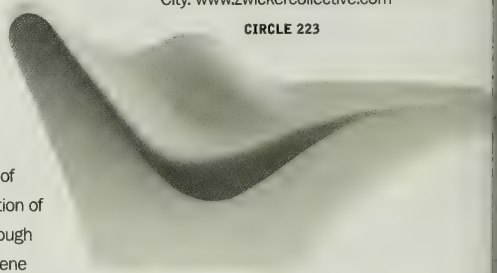
CIRCLE 222



► Here and now

The latest project from Italian designers, artists, and entrepreneurs Francesca and Guido Zwicker, qui new york, functions as a creative studio, showroom, and gallery in New York City. Tokyo-Pop, designed by Tokujin Yoshioka, is part of Driade's Atlantide collection of furnishings available through the studio. The polyethylene lounge chair can be used indoors or out, and is available in a white, light orange, and green-gray. Qui New York, New York City. www.zwickercollective.com

CIRCLE 223



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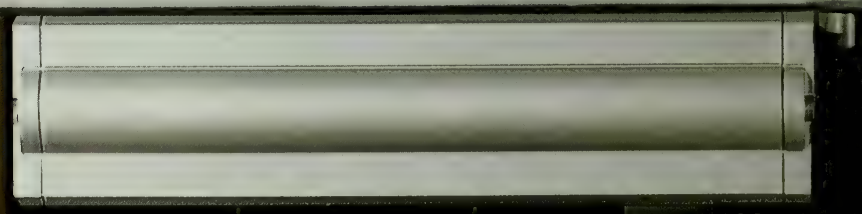
The Ballast Where You Want It.

New PowerArc™ Modular

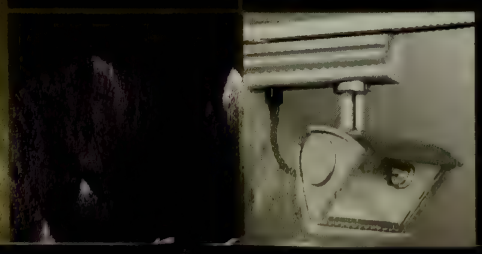
Lightolier's newest addition to Lytespan Track combines superior performance and styling with versatility never before imagined in a Ceramic Metal Halide luminaire. The innovative PowerArc Modular design separates the ballast from the light source for a clean, low profile installation that is simply unprecedented. Combined with an array of accessories, the optics may be located up to six feet from the ballast for maximum installation flexibility.

PowerArc Modular utilizes the latest in Energy Smart® T4/T6 CMH technology in wattages from 20W-100W; replacing incandescent sources with 50%-70% energy savings. For performance, flexibility, and elegance the new standard in CMH track lighting is PowerArc Modular, only from Lightolier.

To find out more, visit www.lightoli...



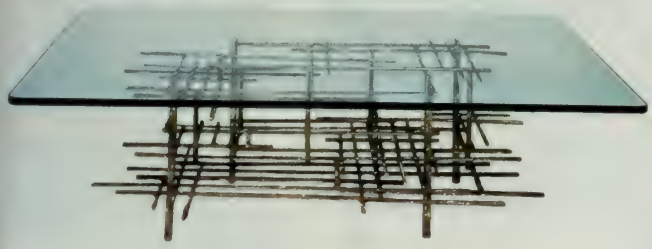
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Flexibility
PowerArc Modular's unique design sep the ballast from the optics. Add access wands, cables and clamps to locate ba up to 6' from lighting elements.

▼ Master of metal furnishings

The N.Y.C. coffee table is one of the handmade pieces on display in the Chelsea studio of designer Silas Seandel in Manhattan. Cast in bronze, and standing 16" high with a 60" x 30" glass top, N.Y.C. can also be reconfigured into a dining table. Seandel has been designing sculptural furnishings since 1963 in solid metals such as brass, bronze, steel, and copper. In addition to tables, his collection includes wall sculptures, mirrors, and fountains. Silas Seandel, New York City. www.silasseandel.com **CIRCLE 224**



► Slate-style shingles

Lamarite Slate Composite Shingles feature the texture and contours of real slate but are lighter in weight, more resistant to cracking, and require less maintenance, according to Tamko Roofing Products. The fire-resistant shingles come in four colors and measure 18" tall x 12" wide. Tamko Roofing Products, Joplin, Mo. www.tamko.com **CIRCLE 225**





▲ Get down with Boogie

Boogie Woogie is the latest design from custom carpet maker Edward Fields. Featured here in a black and red profile, the rug suggests the shapes of treble and bass clefs, guitar strings, and musical notes. Available in any custom size, shape, or color, Boogie Woogie is crafted in 100 percent virgin wool. Edward Fields, New York City. www.edwardfieldsinc.com **CIRCLE 226**

▼ Silver welding anniversary

In honor of Valli & Valli's 25th anniversary, the manufacturer has reintroduced its Ornate Collection of traditional door and hardware based on archival designs and molds from the 1940s. The company was recently commissioned to provide hardware for the fire-damaged Teatro La Fenice in Venice. In addition to utilizing its archival collection, the firm created new hardware using a template of a handle recovered from the theater. Valli & Valli, New York City. www.vallievalli.com **CIRCLE 227**



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The Light Where You Need It.



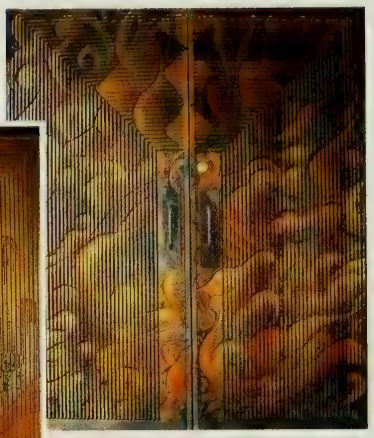
Elegance
With sharply articulated components in die-cast and extruded aluminum PowerArc Modular looks as good as it lights. And it lights superbly.

Performance
Utilizing CMH sources from 20W to 100W, and interchangeable reflectors with beam spreads from 8° to 52°, PowerArc Modular serves applications in spaces up to 30' high.

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The First 100 Years

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Product Briefs









► Joe of all trades

For 20 years, Joe Ginsberg has created and produced a range of custom finishes and surface treatments for the residential and commercial A&D world as well as the entertainment and advertising communities—his client list includes Dreamworks, Sony, IBM, and MTV. His full-service studio works in a range of mediums, including all specialty plasters and cements, fresco, metal, glass, gilding, wood, ceramics, resin, mosaic, and mural. For a current project, he has developed a proprietary mix to create seamless limestone and Carrara marble walls. "Every medium has its distinctive characteristic and beauty, which leads me through the exploration," says Ginsberg. "Nature, the elements, grit, decay, industry, and light inspire me when I approach the design of a new space." Shown are (clockwise, from left) hand-carved and acid-etched entry doors; custom steel radiator covers and a dyed-concrete floor; and a hand-carved sapele wood bed against a plaster wall. Joe Ginsberg, New York City. www.joeginsberg.com **CIRCLE 228**

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Visuellé Wall Base

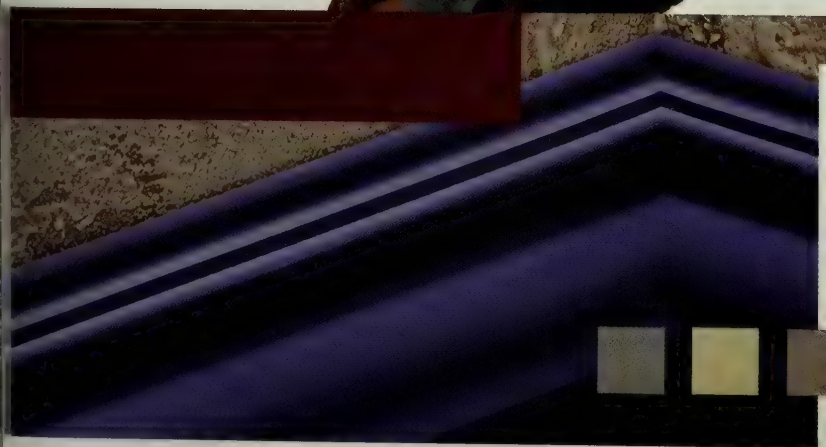
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Product Briefs



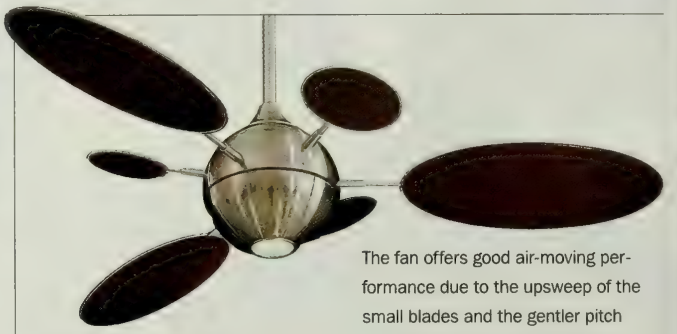
▲ A more affordable shake-style tile

Introduced at the National Roofing Contractors' Show held in San Diego in February, MonierLifetile's Madera concrete tile offering is intended to be the most authentic replication of cedar shakes on the market. A more affordable version of the firm's lightweight Cedarlite tiles, Madera also features the fire protection and durability of the company's standard-weight products. Madera comes in three integral brown colors designed to replicate wood shake roofs on homes in mountain regions, and a pale green color to look like a mossy wood shake roof. MonierLifetile, Irvine, Calif. www.monierlifetile.com **CIRCLE 229**

► Stain- and mildew-safe grout

Laticrete now offers the SpectraLock Grout product with Microban. This stain-blocking epoxy grout material is reinforced with Microban to inhibit the growth of stain-causing bacteria, mold, and mildew. SpectraLock is applied like Portland cement grout and is ready for foot traffic in 12 hours. Laticrete, Bethany, Conn. www.laticrete.com **CIRCLE 230**





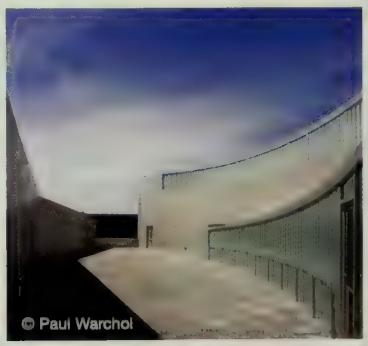
▲ Making the rounds

An interpretation of Alexander Calder's mobiles, the Cirque ceiling fan is the the newest award-winning functional ceiling sculpture from designer Mark Gajewski. The fan offers good air-moving performance due to the upsweep of the small blades and the gentler pitch of the large ones. The fan features a halogen downlight and a wall-mounted, radio-frequency remote control. G Squared Art, Avila Beach, Calif. www.g2art.com **CIRCLE 231**

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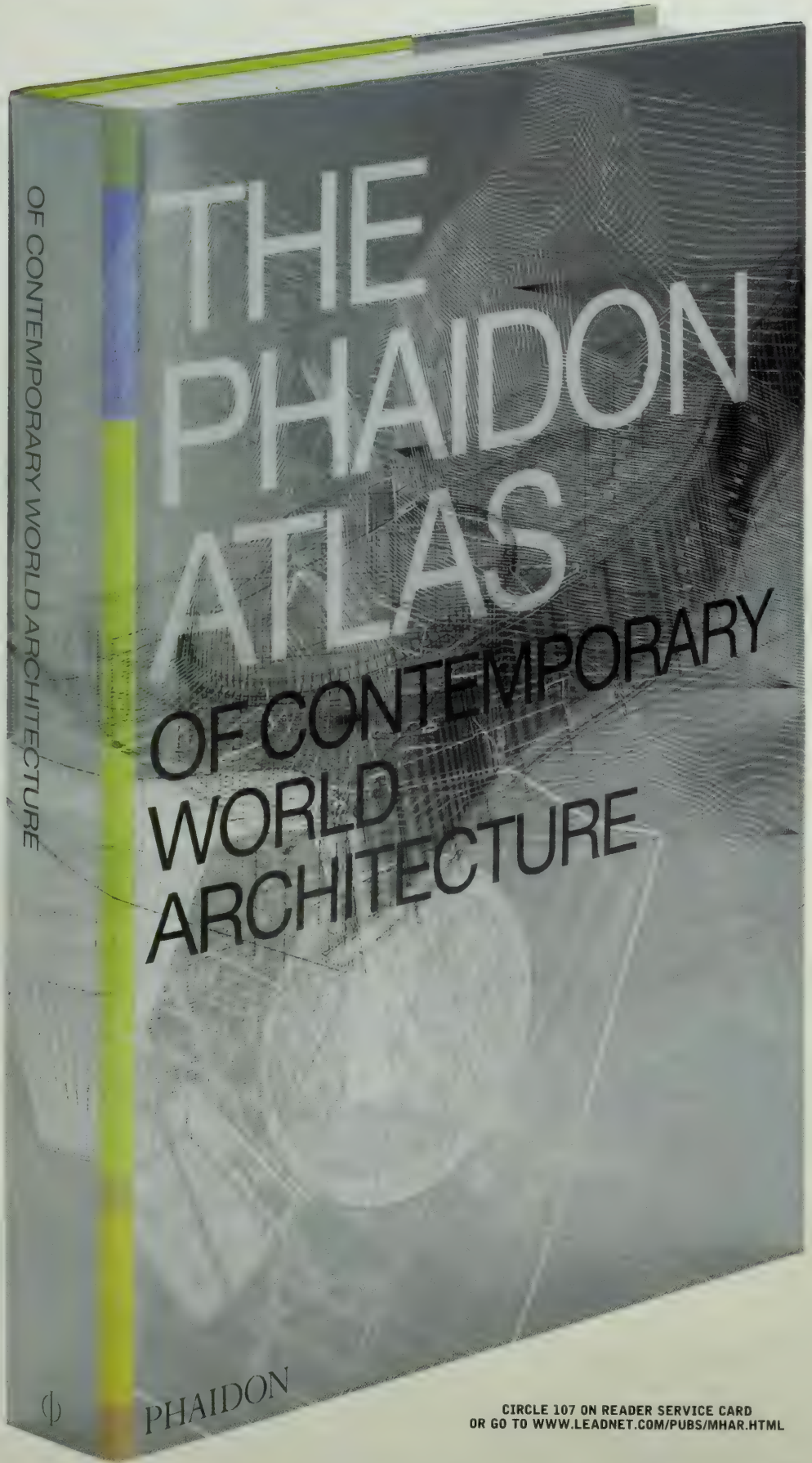






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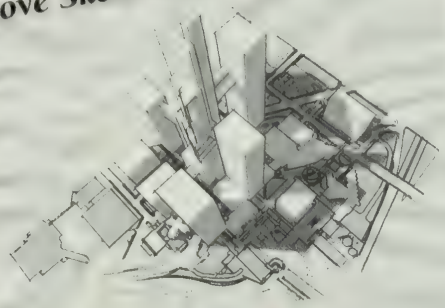
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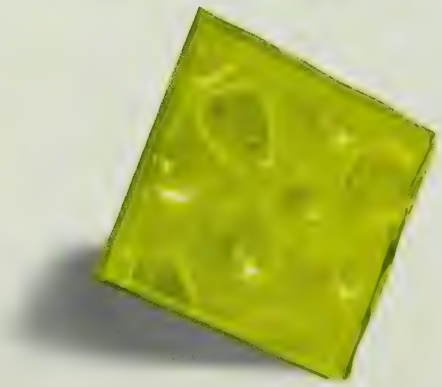
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Product Literature

Ceiling system catalog

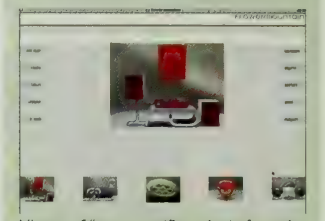
The new 2004 Armstrong Ceiling Systems catalog showcases the company's entire ceiling and suspension system portfolio in one comprehensive selection and specification reference tool. The 248-page catalog utilizes tabs to call out individual ceiling categories, including new Infusions accent canopies, i-ceilings Sound Systems and Wireless Systems, mineral fiber/fiberglass ceilings, MetalWorks, WoodWorks, and suspension systems. Armstrong World Industries, Lancaster, Pa. www.armstrong.com/ceilings **CIRCLE 232**

Stainless-steel selection

A new set of case studies and stainless-steel-grade selection guidelines are available from the International Molybdenum Association (IMOA) and the Stainless Steel Information Center of the Specialty Steel Industry of North America (SSINA). The materials review the importance of selecting the most appropriate stainless-steel grade, surface finish, and design for successful exterior applications of stainless steels. PDF files of the materials are also available. Specialty Steel Industry of North America, Washington, D.C. www.ssina.com. **CIRCLE 233**

NEW SITES FOR CYBERSURFING

Belgian site offers Modern furniture and lighting for rent or sale
www.flowermountain.be



Library of "eco-smart" products from the "Rematerialise" research project out of Kingston University, Surrey, England
www.kingston.ac.uk/~kx19789/rematerialise/html_and_flash/searchwelcome.htm

New site for manufacturer of thermoplastic roofing and waterproofing systems **www.sarnafilus.com**

College and university doors

Marshfield DoorSystems offers a new brochure on interior wood doors for colleges and universities. The brochure highlights Marshfield doors' ability to create multifunctional environments that honor privacy, building codes, and accessibility requirements. The doors are ideal for classrooms, conference rooms, lavatories, residence halls, and other applications. Marshfield DoorSystems, Marshfield, Wis. www.marshfielddoors.com **CIRCLE 234**



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Product Literature

Speech privacy issues

A new brochure from USG Interiors and Lencore Acoustics Corporation details how architects and other building/construction-industry professionals can design and/or upgrade office acoustics to improve speech privacy. The 20-page brochure, *The Acoustics Solution*, illustrates types of sound (direct, reflected, transmitted, and diffracted) and how it is measured and controlled. USG Interiors, Chicago. www.usg.com **CIRCLE 235**

Environmental research

Landscape Forms has produced a white paper titled *Creating the Built Environment: Issues and Trends in Design* with the internationally renowned design firm frog design. The two firms collaborated for a year to study the shape of emerging trends in environmental design. The content of the research focused on behavioral patterns and social interactions in outdoor environments and integration of architecture, landscape architecture, and interior design. A result of the collaboration is the development of the next generation of furniture for the outdoor environment that Landscape Forms will be introducing at the American Society of Landscape Architects annual meeting/expo in Salt Lake City in October. Landscape Forms, Kalamazoo, Mich. www.landscapeforms.com **CIRCLE 236**

Precious storage

A new brochure on museum collection care is now available from Spacesaver. The color brochure illustrates many of the different storage options available from Spacesaver and its partner, Delta Designs, experts in security, preservation, and conservation of museum collections. Storage choices range from high-density mobile systems to specialty cabinetry for storing objects of virtually any size or shape, including historic documents, rare books, and textiles. Spacesaver, Fort Atkinson, Wis. www. spacesaver.com **CIRCLE 237**

Rolling-door catalog

Cornell Iron Works has introduced its *2004 Rolling Door & Grille* catalog. The 24-page catalog is a guide to rolling service doors, fire doors, counter doors, and grilles, plus a selection of operators and control devices. Cornell Iron Works, Mountaintop, Pa. www.cornelliron.com **CIRCLE 238**









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WHERE WE STAND

2003—From Strength to Progress

Fellow Members,

Last year, the AIA National Component continued the fiscal discipline that has restored financial stability while also remaining cognizant of enhanced service. The result: an increased ability to focus more attention and resources on the priorities of membership.

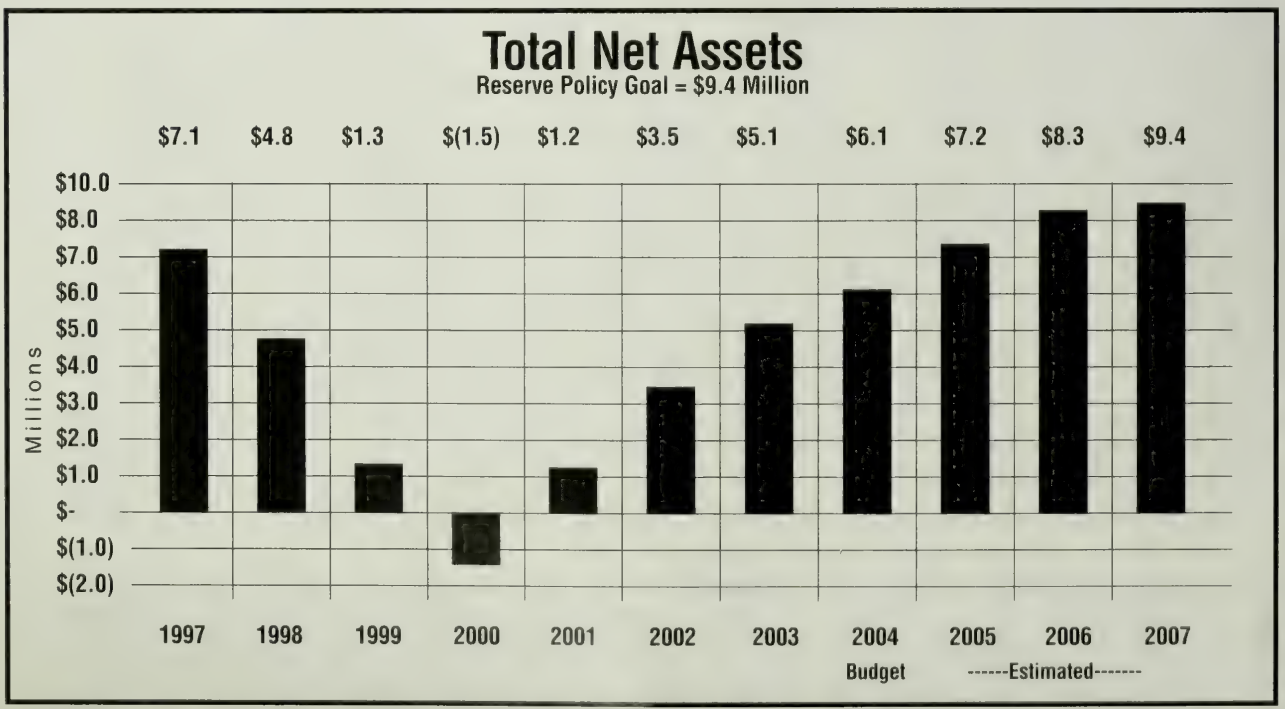
Unaudited financial results show net assets increased $1.6 million to $5.1 million in 2003, and net income showed a positive variance of $661,000, demonstrating for the fourth consecutive year the commitment to a balanced annual operating budget.

But finances are only part of the AIA story for 2003. The real measure of the AIA's health lies in tangible steps towards realizing the AIA mission to advocate the value—and values—of the profession while helping architects help each other achieve a higher purpose: a better built environment.

We are now in a better position to enjoy the fruits of sound fiscal practice and strengthen the Knowledge, Advocacy, and Communities of the AIA. Please join us at the 2004 National Convention and Design Exposition in Chicago June 10-12 and see for yourself.

Sincerely,

Norman L. Koonce, FAIA
AIA Executive Vice President/Chief Executive Officer



AIA Expo2004
New Product and Technology Center Directory



This Directory is for use in association with the **New Product and Technology Center** at the AIA Expo2004 in Chicago. **The New Product and Technology Center** is sponsored by McGraw-Hill Construction and the American Institute of Architects. All of the building materials, systems and finishes reviewed here will be on display at the **New Product and Technology Center** at the AIA Expo2004.

The **New Product and Technology Center** showcases many of the cutting edge technologies and products that will shape the future of the design industry. This special exhibit is located outside the main convention hall. This directory provides booth numbers for the convenience of expo attendees who would like to see these products firsthand and talk with the manufacturers. Non-attendees of the AIA Expo2004 should use the reader service numbers and other contact information provided to obtain information. For more information about the convention and to register, visit www.aia.org.

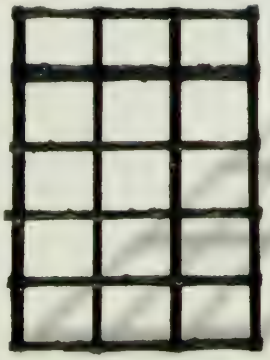
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AIA Expo2004

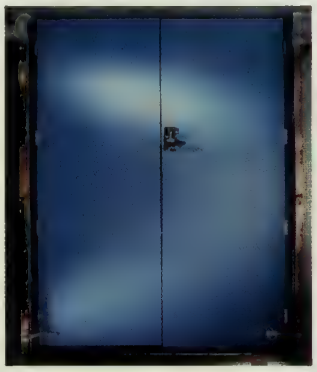


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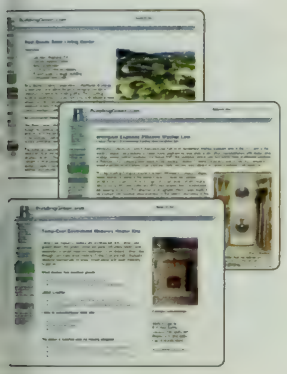


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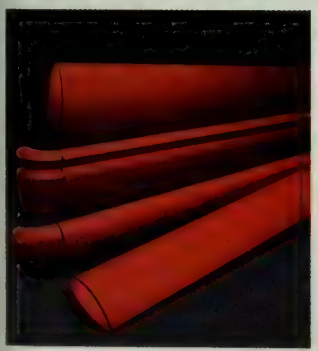
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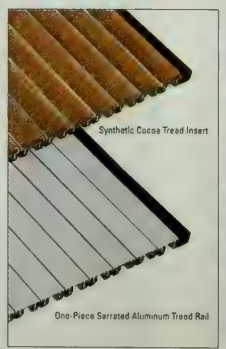
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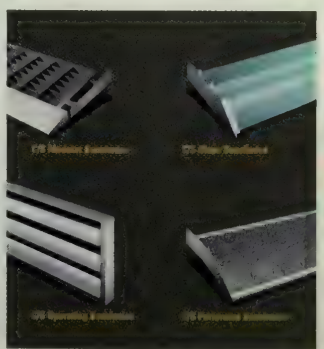
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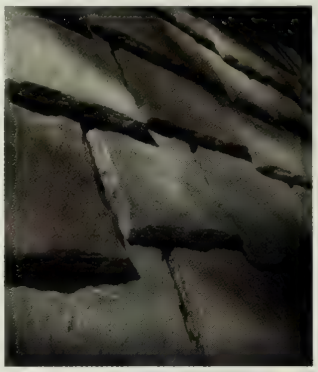


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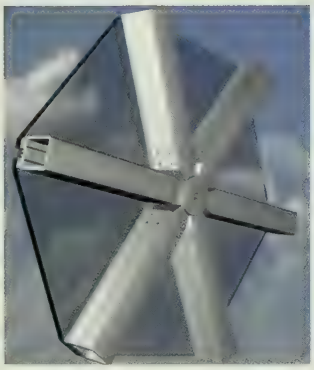


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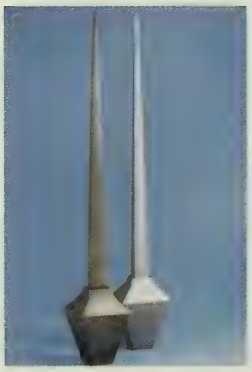


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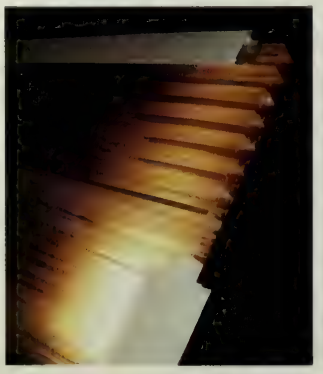


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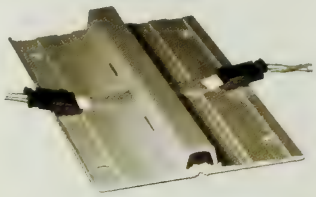


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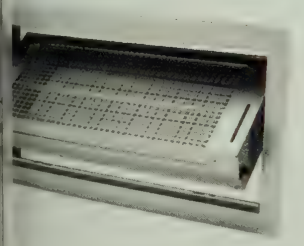


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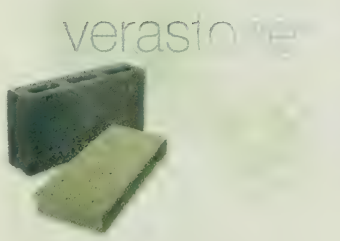
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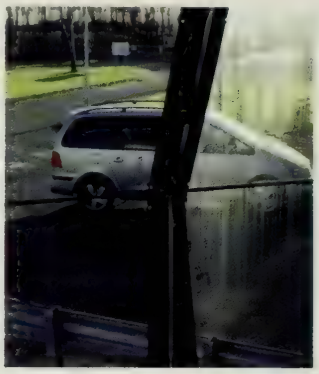
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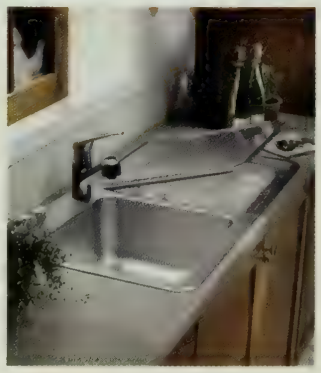


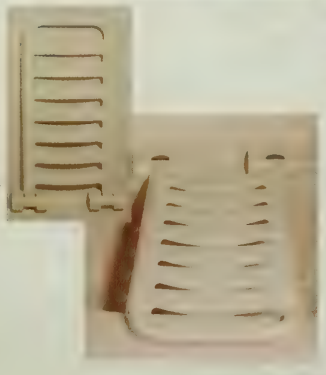
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CALL FOR ENTRIES

ARCHITECTURAL RECORD

Kitchen & Bath Portfolio



The editors of ARCHITECTURAL RECORD are calling for entries for the 2004 KITCHEN & BATH PORTFOLIO. Entry is open to any registered architect who has recently completed an innovative kitchen and/or bath project. Of interest are projects that feature interesting or unexpected materials, address unique client needs, or are designed in a manner that allows these utilitarian spaces to be both functional and beautiful. There is no fee. Submissions should include images (color prints, large-format transparencies, or high-res digital images along with a color printout), and a brief project description. No slides, please. We must receive all materials by Wednesday, May 19th. Selected entries will be featured in RECORD's July 2004 issue.

Submissions should be mailed to:

Rita F. Catinella • ARCHITECTURAL RECORD • Two Penn Plaza • Ninth Floor • New York, NY 10121

If you have any questions, please E-mail Rita Catinella at rita_catinella@mcgraw-hill.com

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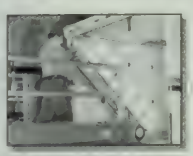
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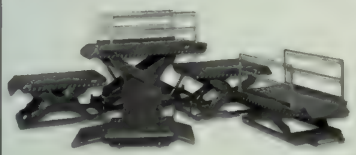
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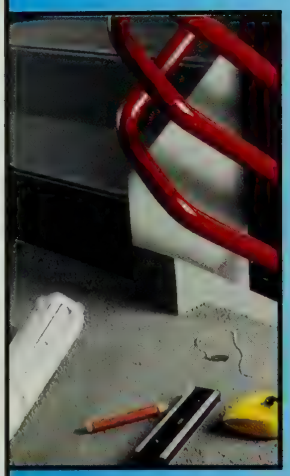
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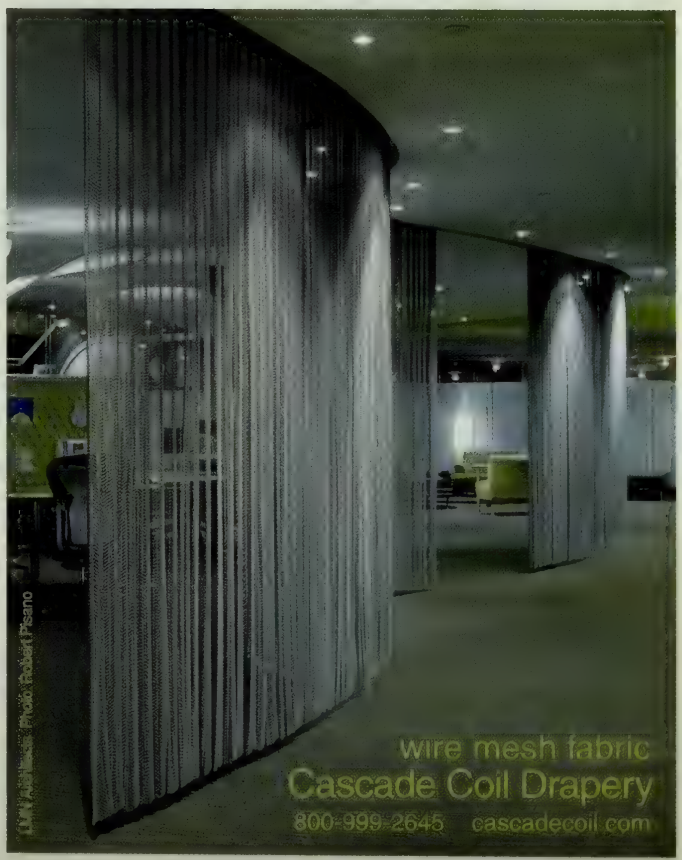


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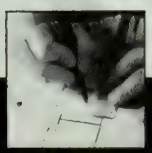
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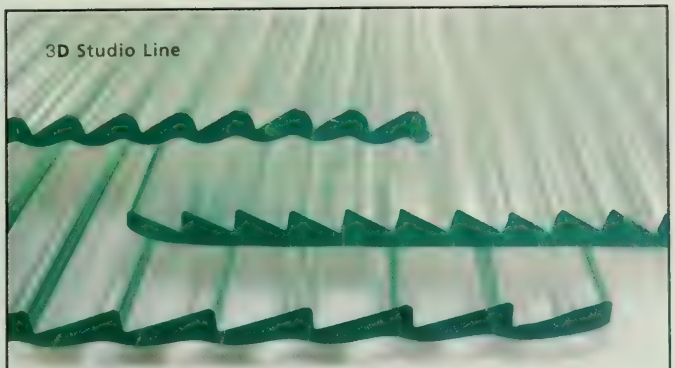


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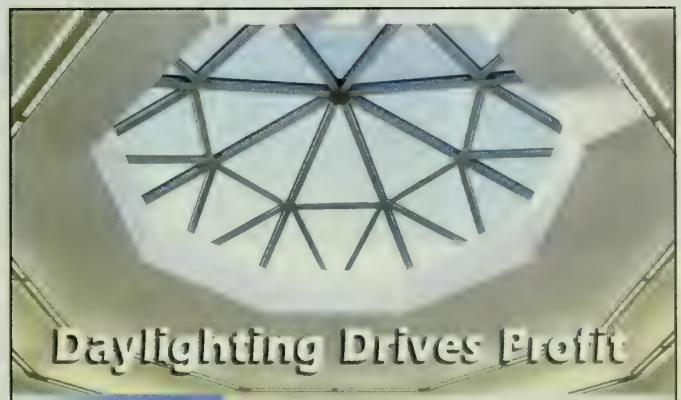
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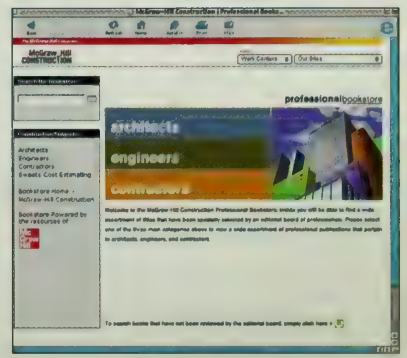
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AIA Notice of AIA Candidates and Convention Business Items

Candidates for Institute Offices

Elections for the Institute's next First Vice President/President-elect, three Vice Presidents, and Secretary will be held June 10–11, 2004, at the AIA 2004 National Convention and Design Exposition in Chicago. If no candidate for First Vice President or Secretary obtains a majority of the votes cast during the initial round of voting, a run-off election will take place on June 12, 2004. The Institute's Secretary has certified the following candidates:

For First Vice President/President-elect
Gaines B. Hall, FAIA (AIA Chicago)
Kate Schwennsen, FAIA (AIA Iowa)
David H. Watkins, FAIA (AIA Houston)

For Vice President
John H. Baker, AIA (AIA Portland)
Michael M. Hricak Jr., FAIA (AIA Los Angeles)
Shannon Kraus, AIA (AIA Dallas)
Thomas R. Mathison, AIA (AIA Grand Valley)
Scott Simpson, FAIA (Boston Society of Architects/AIA)
RK Stewart, FAIA (AIA San Francisco)
Stephen T. Swicegood, FAIA (AIA Atlanta)

For Secretary
Orlando T. Maione, AIA (AIA Long Island)
Robert E. Middlebrooks, AIA (AIA Hampton Roads)
John C. Senhauser, FAIA (AIA Cincinnati)

Proposed Bylaws Amendments

The AIA Board of Directors is sponsoring four amendments to the Institute's Bylaws, which are scheduled for consideration by the delegates at the annual business meeting in Chicago on June 12, 2004. Bylaws amendments require the approval of a two-thirds majority of all votes accredited to be cast at convention.

Bylaws Amendment 04-A Apportionment of Regional Directors. Section 6.012 of the Institute's Bylaws governs the apportionment of the Board's Regional Directors among the Institute's various regions. One provision of Section 6.012 states that the number of Regional Directors for each region "shall be determined from the Secretary's annual count of assigned Architect and Associate members in good standing" according to a formula reflecting the percentage of such AIA members who are assigned to that region. Another provision of Section 6.012, however, states that the "total number of Directors elected from regions shall not exceed thirty-four." Because of recent membership growth in certain regions, enforcement of the 34-director limit would bar at least one region from selecting an additional director to which it has become entitled under the formula applied under Section 6.012. This amendment would revise Section 6.012 of the Bylaws to eliminate the current limit on the number of Directors that may be elected from the regions. If this amendment is adopted, it is not anticipated that the number of Regional Directors would exceed 37 in the foreseeable future.

Bylaws Amendment 04-B Number of Vice Presidents; Term of Office of Vice Presidents. Section 6.1 of the Institute's Bylaws provides for the election of Institute officers, including the annual election of three Vice Presidents for a one-year term. By contrast, the First Vice President serves in that office for one year and then serves an additional year as President, and the Secretary and Treasurer serve in their respective capacities for two year terms. As the Institute has expanded its activities in recent years to be increasingly responsive to members' concerns, the responsibilities of the vice presidents have steadily expanded. In order to foster accountability, strengthen continuity, and broaden the Institute's ability to meet future challenges, the Board recommends that the Bylaws be amended to add a fourth Vice President, and to provide for staggered two-year terms for all Vice Presidents. This amendment would revise Section 6.1 accordingly.

Bylaws Amendment 04-C Removal of Limits on Consecutive Terms Served by Regional Directors. The Institute currently has 18 regions, each of which may select one or more Regional Directors to serve on the Institute's Board of Directors in accordance with the apportionment provisions described above. *(See discussion of Bylaws Amendment 04-A above.)* Section 6.011 of the Institute's Bylaws provides for a three-year term of office for Regional Directors but further provides that, except in unusual circumstances, no Regional Director may serve two consecutive terms of office. The Institute's Board of Directors believes that any decisions regarding term restrictions for Regional Directors should reside with members in their respective regions, and that such restrictions should therefore not appear in the Institute's Bylaws. This amendment would revise Section 6.011 of the Bylaws to remove current restrictions on the number of consecutive terms that a Regional Director may serve on the Board.

Bylaws Amendment 04-D Voting Rights for CACE Representative on Executive Committee. Section 6.5 of the Institute's Bylaws currently includes the immediate past president of the Council of Architectural Component Executives (CACE) as a member of the Institute's Executive Committee, but provides that that member "shall have no voting rights on the Executive Committee." Except for the Executive Vice President/CEO—who is a member of the Institute's staff—the CACE representative is the only member of the Executive Committee without voting rights. Moreover, the current CACE president is a member of the Board, and enjoys full voting rights on that body. This amendment would revise Section 6.5 of the Bylaws so that the CACE Representative on the Executive Committee would have voting rights on that body.

Resolutions

The Board of Directors also supports the following resolutions, which require approval by a majority vote:

04-1 Dues Increase in Support of the Institute's Annual Advertising Campaign
04-2 To Strengthen the Demographic Diversity of the Design Professio
04-3 Evolving the Intern Development Program
04-4 Recognition of Newly Licensed Architect Members
04-5 Appreciation to Retiring Members of the Council of Architectural Component Executives

For candidates' statements and the full text of the proposed Bylaw amendments and resolutions, visit the AIA Web site at *www.aia.or*

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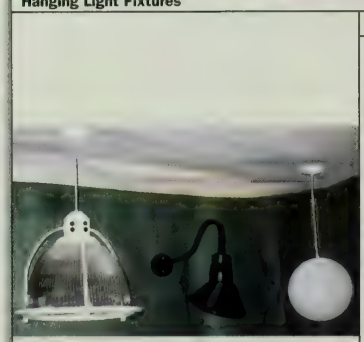
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2 Site construction



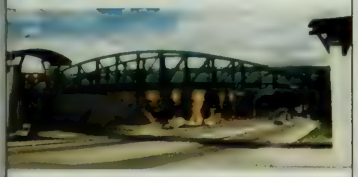
This Smith & Hawken Premium Teak™ collection combines style and sophistication with modern comfort. Hadley Peak™ is handcrafted with traditional mortise-and-tenon joinery that stays rock-solid and will endure season after season of rain, snow, and sun—without storing, covering, or maintenance of any kind. Whether specified for a residential patio or commercial hospitality setting, the extra-thick, Sunbrella®-covered cushions provide guests with a luxurious level of comfort. Premium Teak is ecologically harvested from Javanese plantations—making it a sound environmental choice. To learn more, contact Smith & Hawken and ask about substantial discounts offered to trade customers.

SmithandHawkenTrade.com | 159

Excel Bridge Manufacturing

Custom Engineered Bridges | 800-548-0054

2 Site construction



Custom engineering is an Excel Bridge mainstay. When a bridge integrates successfully into its environment, it becomes the solution to its architectural problem. At Excel, they specialize in custom engineered bridges that fit your venue just right. If your project requires a unique design with the highest possible quality construction standards, count on Excel Bridge Manufacturing to succeed.

www.excelbridge.com | 157

ISG Resources

Fly Ash Concrete Additive | 888-236-6236

3 Concrete



Fly ash, a 100% recycled resource from coal-based power plants, improves concrete performance while benefiting the environment. When included in concrete, fly ash works chemically and mechanically to enhance concrete quality. Architects appreciate improved finishes, reduced efflorescence and cracking, and greater durability. Fly ash use partially displaces cement production and related emissions of greenhouse gases. In widespread use from coast to coast, fly ash is appropriate for any concrete structure. Send for free technical and environmental literature or request AIA-CES registered training on fly ash use. Fax number 801-984-9410.

www.flyash.com | AIA Booth #1191 | 160

Master Halco, Inc.

Decorative Wire Fencing

2 Site construction



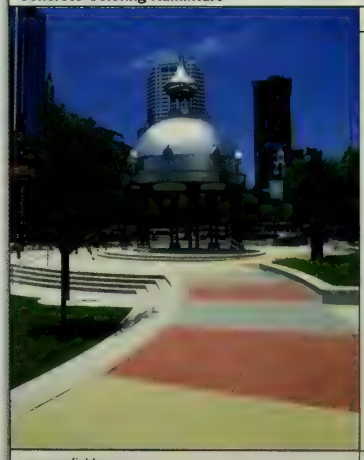
New EuroScape™ 300 Decorative Wire fencing incorporates some of the best design elements of industry-leading ornamental iron and color chain-link. Its steel and wire mesh construction in a special twin wire design creates unique joint strength and durability. EuroScape 300 is available in four colors: tan, bronze, white, and black. Decorative wire fencing complements a variety of architectural styles and is backed by a 12-year limited warranty. With more than 60 locations across North America, Master Halco has the products and services to satisfy your project requirements. Visit the Web site to view extensive product offering and download specifications and drawings. (Black decorative wire fencing as seen in the 2003 Sunset Idea House.)

AIA Booth #553 | 158

L. M. Scofield Company

Concrete Coloring Admixture | 800-800-9900

3 Concrete



CHROMIX® admixtures for Color-Conditioned™ Concrete: Award-winning projects begin with award-winning materials. CHROMIX Admixtures for Color-Conditioned Concrete are colored, water-reducing, set-controlling admixtures for ready mixed architectural concrete. Coloring concrete integrally, they produce rich hardscapes and precast, tilt-up, or cast-in-place buildings of enduring beauty. CHROMIX Admixtures provide permanent, streak-free color conditioning and increased concrete strength at all ages. Call or email to request color cards and specifications. Email info@scofield.com.

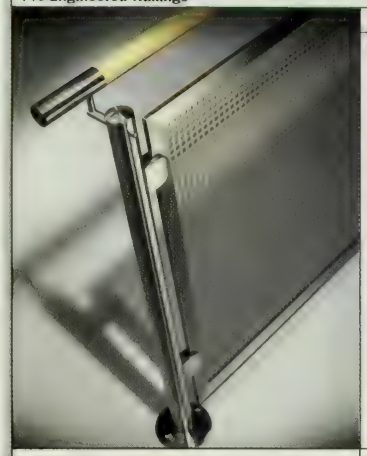
www.scofield.com | AIA Booth #2031 | 161

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Handrail Design, Inc.

Pre-Engineered Railings | 717-285-4088



5 Metals

CIRCUM™ stainless railing system: Manufactured of corrosion-resistant stainless steel, CIRCUM is ideal for interior or exterior applications in commercial and residential facilities. Infill panels available in, but not limited to, perforated stainless steel, tempered glass, and stainless steel rods. Handrails in wood/stainless, stainless, or colored nylon. Curved rails and custom designs are available. HDI Railing Systems. Email info@hdirailings.com.

www.hdirailings.com | 162

Simpson Strong-Tie Co., Inc.

Anchor Tiedown System | 925-560-9088



6 Wood & plastics

For multistory commercial buildings or apartment houses, Simpson's ATS (Anchor Tiedown System) provides an improved method for anchoring shear-walls to resist uplift forces caused by earthquakes and high winds. The patented concentric holdown system integrates vertical load resisting hardware easily and economically into standard wood frame construction up to five stories high. Anchor Tiedown System features high load capacity, fast installation, no horizontal drilling, and take-up of 1-in. of wood shrinkage and compression per floor. It can be installed allowing rod offset up to 1-3/4-in. maximum per floor. Code recognized by ICBO (ER-5090) and COLA (RR-25326). Fax number 925-833-1490.

AIA Booth #1132 | 165

Melton Classics, Inc.

Architectural Products



6 Wood & plastics

Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, moldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers a maintenance free balustrade product ideal for any application. Balustrades are available in four durable materials: MarbleTex™ synthetic stone, poly/marble composite, cast stone, and polyurethane, and can meet any code or radius application.

www.meltonclassics.com | 163

EcoStar

Roof Tiles | 800-211-7170



7 Thermal & moisture protection

EcoStar's Majestic Slate™ Beaver Tail tiles offer a rounded slate style and unique color variations to create beautiful architectural options for premium steep-slope roofing. Developed using 100% recycled rubber and plastics, Beaver Tail offers an environmentally friendly roofing alternative. All EcoStar tiles offer an elegant look for steep-slope applications along with longevity, durability, and lightweight benefits. Beaver Tail commands an impressive 50-year warranty and offers Class A Fire and Class 4 Hail Resistance. For more information, please call or visit the Web site.

www.premiumroofs.com | AIA Booth #521 | 166

Panel Source International Inc.

Fire-Retardant Particleboard, MDF & Plywood Panels | 877-464-7267



6 Wood & plastics

Pyroblock® Class A fire-retardant particleboard, MDF, and Plywood. Formaldehyde-free, FSC certified, recycled or rapidly renewable fibers. Pyroblock is ideally suited for the AEC community working on LEED™ registered projects. Pyroblock is available in numerous thicknesses and sizes; availability is not a problem when you specify Pyroblock.

www.panelsource.net | 164

Finland Color Plywood Corp.

Wood Panel Products | 310-396-9991



7 Thermal & moisture protection

Finland Color Plywood Corp. is the direct U.S. importer of the Parklex product line of prefinished commercial grade wood panel products; including Parklex 1000—exterior grade wood composite panel consisting of natural wood veneer impregnated with phenolic resin, coated with UV-resistive polymer film, bakelized core and balancing layer. Suitable as Ventilated Curtain Facade (VCF). Other Parklex products include; Parklex 500—interior use timber panels, Parklex 2000—commercial grade floating floor, Parklex 3000—timber finishes for raised floors. For additional information and samples please contact Finland Color Plywood Corp. Fax number 310-396-4482. Email info@fcpcusa.com.

www.fcpcusa.com | 167

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Ludowici Roof Tile

Ceramic Roofing Tiles | 800-917-8998



7 Thermal & moisture protection

The roofing material Mother Nature would have made (had she started from a blank slate): Imperial Slate is an extra-thick ceramic roofing shingle, which replicates the depth and patina of mined slate in almost every respect. But as a clay tile, fired in the kilns of Ludowici at over 2,100°F, it is substantially lighter, less brittle, easier to install, and consequently less expensive than conventional slate. And like most Ludowici roof tiles, Imperial Slate is warranted to work beautifully for 75 years after installation. Imperial Slate. It isn't simply like slate. It's what slate would like to be.

www.ludowici.com | 168

Trespa North America, Ltd.

Facade Cladding Panels



7 Thermal & moisture protection

Trespa Meteon is a unique exterior facade cladding system suitable for both new construction and re-cladding projects. Meteon exterior systems offer many ways to be expressive, either subtly or boldly. Trespa Meteon is available in a variety of standard solid colors, natural prints, and rich metallic hues as well as satin, gloss, and rock textures. Meteon panels are completely color fast, with patented UV-resistant technology. They resist acid rain, air pollution, and impacts and will not rust or delaminate. They require little upkeep, are easy to clean, and are made from renewable resources. Trespa is BEES listed, a member of the USGBC, and ISO 14001 certified. Trespa's Meteon panels protect your projects while expanding your possibilities.

AIA Booth #3119 | 171

Polyglass

Self-Adhesive Roofing Membranes | 800-894-4563



7 Thermal & moisture protection

Known for innovative modified bitumen systems, Polyglass has developed the next generation of SA self-adhesive roofing membranes with ADESO technology. After several years of research and engineering, Polyglass has developed a full line of revolutionary self-adhesive products based on ADESO technology. POLYGLASS offers a wide range of SA self-adhesive membranes with ADESO Technology, which are modified using a "true" APP, SBS, or TPO compounds on the top weathering layer, an aggressive self-adhesive compound on the bottom layer, and are built with a reinforced polyester and/or reinforced fiberglass mat. Email customerservice@polyglass.com.

www.polyglass.com | 169

Doug Mockett & Co.

Contemporary Door Handles | 800-523-1269



8 Doors & windows

Sensous "S" curve stainless steel door pull is anchored by two oval brass supports. Overall it is 38-3/4-in.-high. HDL31 is just one of five initial door handle offerings from Doug Mockett & Company. These handles are imported from Confalonieri & C., one of Italy's most prominent designers and makers of contemporary furniture hardware and accessories. Mockett has just been named exclusive U.S. distributor for Confalonieri and is celebrating by issuing in June a new 275-page color catalog filled with many new designs of their office and computer furniture hardware, as well as a brand new section of hardware for kitchen, bath, and closet. Email info@mockett.com.

AIA Booth #1131 | 172

RHEINZINK America, Inc.

Stepped Roof | 617-871-6777



7 Thermal & moisture protection

QUICK STEP® — The RHEINZINK® Stepped Roof is a modern, prefabricated roofing system. The installer can assemble the prefabricated individual components quickly and with very little effort. Highly trained craftsmen are not needed, given the simplicity of the system. In addition, prefabricated flashings are available for roof penetrations, including chimneys and skylights. The unique profile of the QUICK STEP system gives architects the opportunity to bring a new aesthetic to metal roofing. Fax number 617-871-6780. Email info@rheinzink.com.

www.rheinzink.com | AIA Booth #1965 | 170

Smoke Guard Corporation

Smoke Control for Elevator Hoistways | 800-574-0330



8 Doors & windows

The solution for smoke containment at the hoistway. Designed with medical, hospitality, and multistory residential applications in mind, the Smoke Guard® System is an aesthetically pleasing, space-saving alternative to traditional applications. Concealed in the ceiling or a valance, the Smoke Guard System deploys only when smoke is detected at the hoistway. Consider the usable space available in the project. The Smoke Guard System returns usable space to the owner on every floor, creating valuable space in your design. The deployed system forms a smoke- and draft-control assembly at the elevator hoistway door as required by the International Building Code (IBC). Fax number 208-376-1600. Email info@smokeguard.com.

www.smokeguard.com | AIA Booth #2232 | 173

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Stainless Doors, Inc.

Seamless Stainless Doors — 888-438-8677



8 Doors & windows

The stainless advantage: The engineers at Stainless Doors, Incorporated have developed a steel stiffened door from stainless steel, with internal double vertical hat channels and no visible marks on the door face skins, maintaining the aesthetics while building in durability. Features: (1) flush door standard; (2) 18, 16, 14, and 12-ga. steel available; (3) type 304, 316 optional; (4) finish #4 satin standard, optional finishes available; (5) vertical grain; (6) edge seam (lock-seam) or optional seamless; (7) vertical double hat stiffeners; (8) fiberglas between stiffeners; (9) inverted top and bottom channels; (10) hardware—standard door preparations. Fax number 888-438-8677. Email info@stainlessdoors.com.

www.stainlessdoors.com — 174

VETROTECH Saint-Gobain

Fire-Rated Glass Walls — 888-803-9533



8 Doors & windows

The new VDS Framing System is based on European technology to provide a narrow profile, easy-to-install fire-rated solution to create "glass walls" with ratings of 60-min. or greater. Used in conjunction with SGG SWISSFLAM/SGG CONTRAFLAM, fire and safety rated glazing products, the VDS Framing System provides a transparent wall that acts as a barrier to radiant/conducted heat transfer. The narrow steel profiles are available either welded or knocked-down (K-D). Listed as a transparent wall, the combination of VDS Framing and SGG SWISSFLAM/SGG CONTRAFLAM allows for unlimited glazing area for use in location where the glazing exceeds 25% of the total wall area.

www.vetrotechUSA.com — 177

Stone River Bronze

Architectural Bronze Hardware



8 Doors & windows

Stone River Bronze manufactures Investment Cast architectural bronze hardware for residential and commercial use. Highlights include architectural door hardware; bronze mortise template hinges; classic and designer series styles; high quality finish and texture options; bronze screws, strikes, and faceplates; and extra-fine detail due to the Investment Cast process. Stone River's window and patio door hardware offers the most comprehensive selection of authorized options in the industry. Stone River Bronze products feature patent-pending systems including, but not limited to, field reversible mechanisms, easy install hinge finials, and its industry-leading handle and turn piece system, tested under the toughest conditions.

www.stoneriverbronze.com — AIA Booth #3145 — 175

Weather Shield Windows & Doors

Wood Interior Windows & Doors



8 Doors & windows

As the flagship line for upscale homes, Weather Shield is the company's most comprehensive line of windows and doors. Weather Shield windows and doors feature wood interiors and are available with either an extruded aluminum exterior or a wood brick mold exterior. Windows and doors come in ten long lasting Flexicolor exterior finishes, and are available in any of seven different wood species from the Custom Wood Interiors Collection™.

www.weathershield.com — 178

Technical Glass Products

Fire-Rated Hardwood Frames — 888-397-FIRE



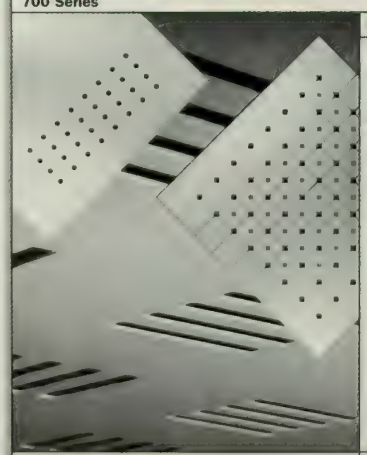
8 Doors & windows

Technical Glass Products (TGP) has added fire-rated hardwood framing and doors to their popular Fireframes® line. The new Hardwood Series provides an attractive alternative to traditional hollow metal steel frames. Listed and labeled by Warnock Hersey with 20 and 45-min. ratings, the Hardwood Series features an engineered core for dimensional stability and a thick hardwood face for unmatched beauty. The frames are available in a wide variety of wood species and come in complete packages for easy installation. Fabricated in North America, the Hardwood Series doors and frames are available pre-finished and work with most fire-rated hardware. Email sales@fireglass.com.

www.fireglass.com — AIA Booth #3139 — 176

Gage Corporation, Intl.

700 Series — 800-786-4243



9 Finishes

The new standard for perforated metal ceilings. Gage introduces its new 700 series of perforated metal ceilings manufactured from 50% recycled aluminum. Standard designs include five distinctive finishes and 14 different perforation patterns. Selective and custom designs are also available. Contact the Gage factory for literature and samples.

www.gageceilings.com — 179

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L. M. Scofield Company

Concrete & Cementitious Flooring | 800-800-9900



9 Finishes

Stylish Scofield flooring systems: For beauty and durability, concrete and cementitious toppings provide stylish flooring for high traffic areas in offices, lobbies, public spaces, food service, and retail areas. Scofield Systems offer diverse choices-ranging from monochromatic toppings to translucent, antique stains for faux finishes and dramatic graphics. Email info@scofield.com.

www.scofield.com | AIA Booth #2031 | 180

Hufcor, Inc.

Movable Glass Partition Systems | 800-542-2371



10 Specialties

Hufcor introduces a complete new line of movable glass partition systems featured in a new brochure. The line features frameless storefront style panels with patent-pending batwing passdoors, acoustic and weather resistant glasswalls without floor tracks, wood-clad products, and electrically controlled E-Trac tracking system and Loschwand overhead systems. Call or visit the Web site.

www.hufcor.com | AIA Booth #2413 | 183

Nova Distinctive Floors

Cork Floating Floors | 866-576-2458



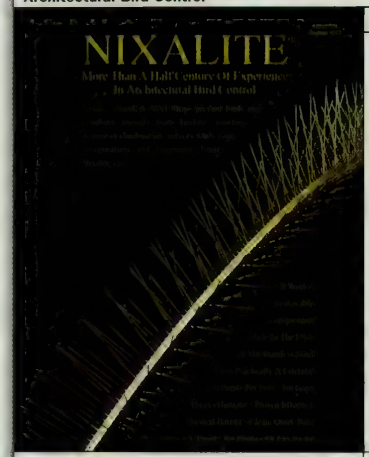
9 Finishes

Nova cork floating floors artistically embrace design, function, and environmental consciousness. Manufactured in 1-ft. by 3-ft. "klick" (glueless) system planks that don't adhere to the sub-floor, Nova cork's 2004 line boasts 28 designer patterns, including Mesa (shown), that are sure to bring beauty and comfort to your home. Harvested from forests that meet stringent environmental, social, and economic standards, Nova cork, linoleum, and underlayment products have received the "Green Spec" distinction from Building Green, Inc., as well as FSC and SCS certifications and offer a 20-year residential warranty and 10-year commercial warranty. Fax number 310-830-9589. Email c.matthews@novafloorings.com.

www.novafloorings.com | AIA Booth #1441 | 181

Nixalite of America, Inc.

Architectural Bird Control



10 Specialties

Nixalite® is a UV-proof physical bird barrier that outlasts and outperforms other steel, plastic, chemical, or electrical bird control devices. Nixalite stainless steel bird control strips provide effective, long lasting, and inconspicuous control of pest birds on any structure. Only Nixalite has installations that are 50-plus-years-old and still providing perfect bird control. EnduraNet is a knot-free, twisted, and Z-locked square mesh bird netting. This ultra-strong polyethylene bird netting has 24 individual cords that are interwoven to give the netting superior strength. Z-lock mesh means that the netting maintains a square mesh without knots that can slip or bind, reducing the netting strength. EnduraNet's 51-lb.- (23.2kg) per-strand tensile strength is one of the highest in the industry.

www.nixalite.com | 184

Gyford Productions

Four-Way Hub | 775-829-7272



10 Specialties

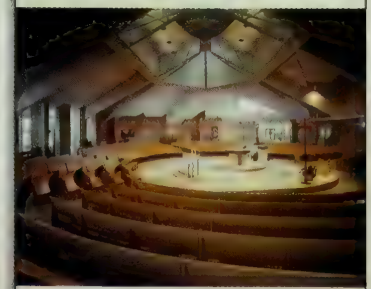
Gyford Productions, Creator of the Original Standoffs and StandOff Systems™, stocks over 250 components in five different product lines. The four-way hub offers the opportunity to layer or mount multiple graphics together by joining them in the corners. Custom sizes, colors, and finishes available upon request. Most stock items ship the same day that they are ordered. Complete design and technical support is available. All of Gyford's products are made in the U.S. Call for a free catalog. Fax number 775-829-1331. Email info@standoffsystems.com.

STAND OFF™ SYSTEMS

www.standoffsystems.com | AIA Booth #2391 | 182

New Holland Church Furniture

Curved Church Pews | 800-220-1465



12 Furnishings

Curved pews are "Round For A Reason"™ and are designed and manufactured by New Holland Church Furniture. Curved pews are designed for maximum seating, curved for efficient use of space, designed to enhance worship, created for community, uniting the family of God. New Holland Church Furniture is a certified member of the Architectural Woodwork Institute (AWI), so you can be assured of the very highest quality. Email nhcw@newhollandwood.com.

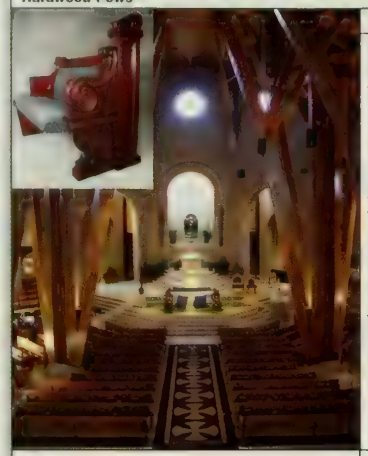
www.newhollandwood.com | 185

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The Marshall Company

Hardwood Pews | 208-642-3344



12 Furnishings

For over 75 years, The Marshall Company has offered distinctive church furnishings throughout the U.S. and Canada. A longtime leader in the church furniture business, Marshall prides itself on being one of the few companies in the U.S. to still manufacture only quality solid hardwood pews. That means no veneers, no chipboard cores, no plastic laminates, just the classic beauty and durability of solid Northern red oak. But materials aren't everything; Marshall's highly skilled craftsmen are dedicated to designing furniture that is beautiful and functional, as well as being affordable. Fax number 208-642-9537. Email pews@marshallpews.com.

www.marshallpews.com | 186

Taiyo Birdair Corporation

Tensioned Membrane Structures



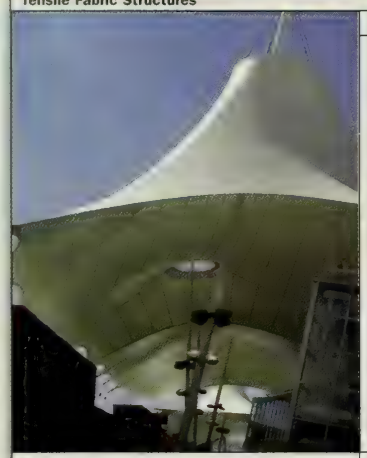
13 Special construction

Taiyo Birdair is a specialty contractor offering architectural solutions in tensioned membrane and lightweight roof structures of all sizes and complexity. Taiyo Birdair is closely linked with large-scale projects for stadiums, transportation terminals, and convention centers. However, they offer solutions of every size and type also covering amphitheaters, museums, courtyards, field houses, border crossings, building entrances, and landscape shade applications. Taiyo Birdair offers comprehensive design/build resources with complete project team support services from concept through completed project. Taiyo Birdair's shade structures also provide form with function to enhance landscapes and add weather protection.

www.taiyobirdair.com | AIA Booth #1531 | 188

FabriTec Structures

Tensile Fabric Structures | 866-275-9710



13 Special construction

Fabritec Structures introduces a new generation of tensile fabric technology. Its highly specialized fabric structures utilize the most advanced architectural materials available and are non-combustible, both thermal- and UV-resistant, and can offer full weather protection. With virtually unlimited design options and applications, FabriTec's products are both practical and often visually spectacular. Designers can choose fabrics from a wide range of color and translucency and enjoy a cost effective and "fast-track" alternative to conventional building systems. FabriTec Structures provides clients with complete design/build services, including concept development, engineering, fabrication, project management, and installation.

www.fabritecstructures.com | AIA Booth #826 | 187

Schindler Elevator Corp.

Machine Room-Less Elevator | 973-397-6500



14 Conveying systems

The Schindler 400A™ machine room-less elevator for mid-rise buildings features a compact machine that installs within a simple hoistway and mounts directly to the elevator rails. It requires less building construction interface, simpler site preparation, and less lead-time. The small controller cabinet won't intrude on rentable space. The Schindler 400A is available in 2,100, 2,500, 3,000, and 3,500-lb. capacities. It allows up to 21 openings (front/rear), is suitable for two to 20 stops, and travel up to 200-ft. at speeds of 200 and 350 fpm. The system is environmentally friendly, using up to 30% less power than traditional elevator systems.

www.us.schindler.com | AIA Booth #547 | 189

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THE CITY OF ASPEN

Design Competition:
Burlingame Ranch Affordable Housing

Aspen, CO — The City of Aspen is sponsoring a Design Competition for up to 330 affordable housing units at Burlingame Ranch. Three to five Development Teams will be selected through the Qualifications Process to submit proposals for the Design Competition.

The three to five Development Teams selected to participate in the Design Competition will receive compensation after completing the competition. The selected Development Teams will be required to make a combined site visit and attend an orientation meeting in Aspen at their expense.

The winner of the Design Competition may or may not be offered Part 1 and/or Part 2 of the Developer Contract to complete land use entitlements, building permits, construction documents and construction of the project.

Deadline to request an RFP package is May 31, 2004. The RFP package is available for $25.00 payable to the City of Aspen. **Qualifications submittals are due June 4, 2004 3:00 p.m.** For more information or to request an RFP package, contact Michelle Bonfils, Project Manager 970.920.5582 or michellb@ci.aspen.co.us

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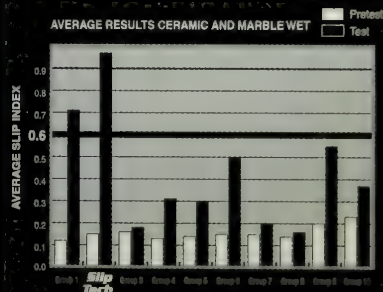
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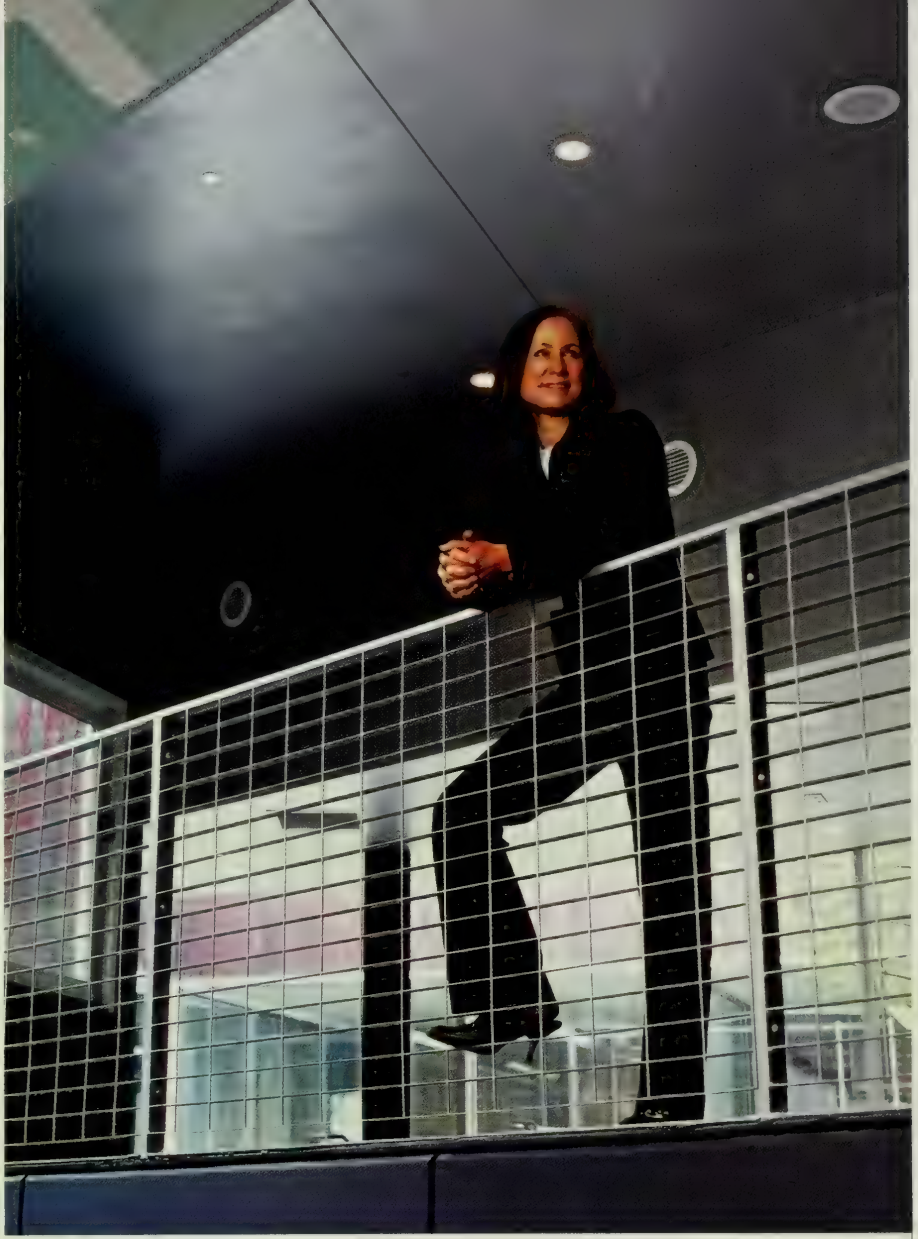


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Donna Robertson: IIT's architecture dean as client

Interviewed by Suzanne Stephens

Since 1996, Donna Robertson, AIA, has found herself in the bastion of Miesian Modernism as the dean of the College of Architecture at the Illinois Institute of Technology in Chicago. (The campus was designed from 1945 to 1968 by Ludwig Mies van der Rohe, who ran its architecture school until 1958.) Yet Robertson graduated from Stanford University with a B.A. in English and received her M.Arch. from the University of Virginia in 1978. She directed the architecture program at Barnard College from 1985–92 and then became dean of the Tulane University School of Architecture, a position she held through 1996. She is also principal of the firm Robertson McAnulty Architects.

Q: *Someone said that IIT eats its architecture deans for breakfast. How's it going?* I've been the dean eight years, and I'm still here. Yes, I have a non-Miesian, non-IIT background, and I am female. There have been rough moments. But enrollment in the College of Architecture went from 368 in 2002 to 472 in 2003. We hope to keep growing and not soften our standards. Now, with Rem Koolhaas's McCormick Tribune Campus Center (page 122) and Murphy Jahn's State Street Village (page 130), with which I was involved in the role of a client, architecture is again drawing attention to the school.

What have been the most difficult things about your post? The issue over pedagogy. The faculty has been worried about the status of Mies's curriculum. It had eroded over the years and needed to be updated if it was to be fully implemented.

What was the basis of Mies's curriculum? In the classic Miesian format, you didn't design a building until the fourth year of your undergraduate education. The first year was devoted to developing visual literacy and craft; the second year to constructing with brick and wood; the third year, steel and concrete. Then the fourth and fifth years were focused on building design. I am interested in teaching construction technology through studio—the central tenet of Mies's principles—but I want to be sure that any time a student is asked to produce a building form, he or she can take design into consideration.

What about the new generation of architects? Is there a place for them? Yes—for example, we have Ron Krueck of Krueck & Sexton, Jeanne Gang and Mark Schendel of Studio Gang, and Martin Felsen of UrbanLab teaching at the school. There are still former students of Mies on the faculty, and they are invaluable. We all realize we can't do stale Mies, however, and so we try to create a balance between construction technology and design. It is so delicate to maintain. And we have to keep finding building forms that are of our time, not of Mies's.

What about Koolhaas's effect on the school? We hear some of the old guard has not been all that happy with the Campus Center's brash, not-too-detailed approach. It was fascinating to see Rem go toe-to-toe with Mies. We like to call our educational and architectural program "Mies and Beyond." We are making the studio the locus of experimentation, and the new buildings by Koolhaas and Jahn embody that idea. We want to keep growing and plan to expand by moving upper-level studios and research classes to a building—3410 S. State Street—south of Crown Hall. It too was designed by Mies—so his presence is still felt physically and pedagogically.

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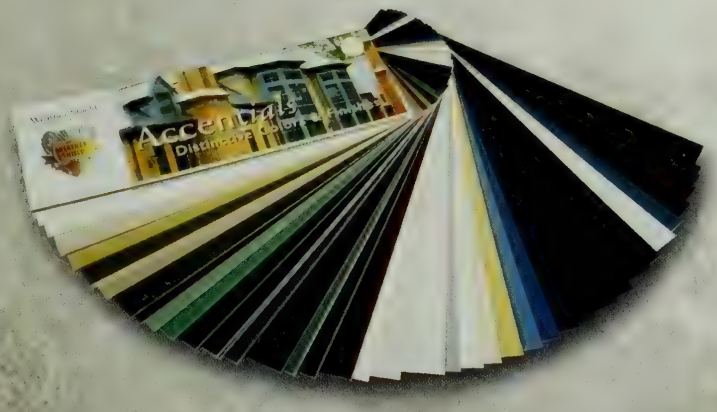
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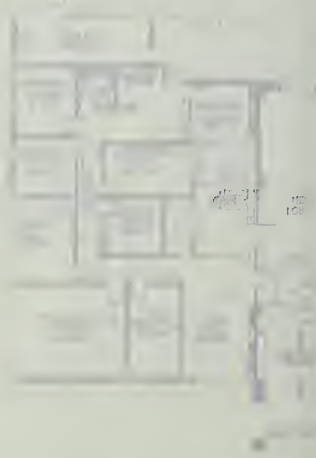
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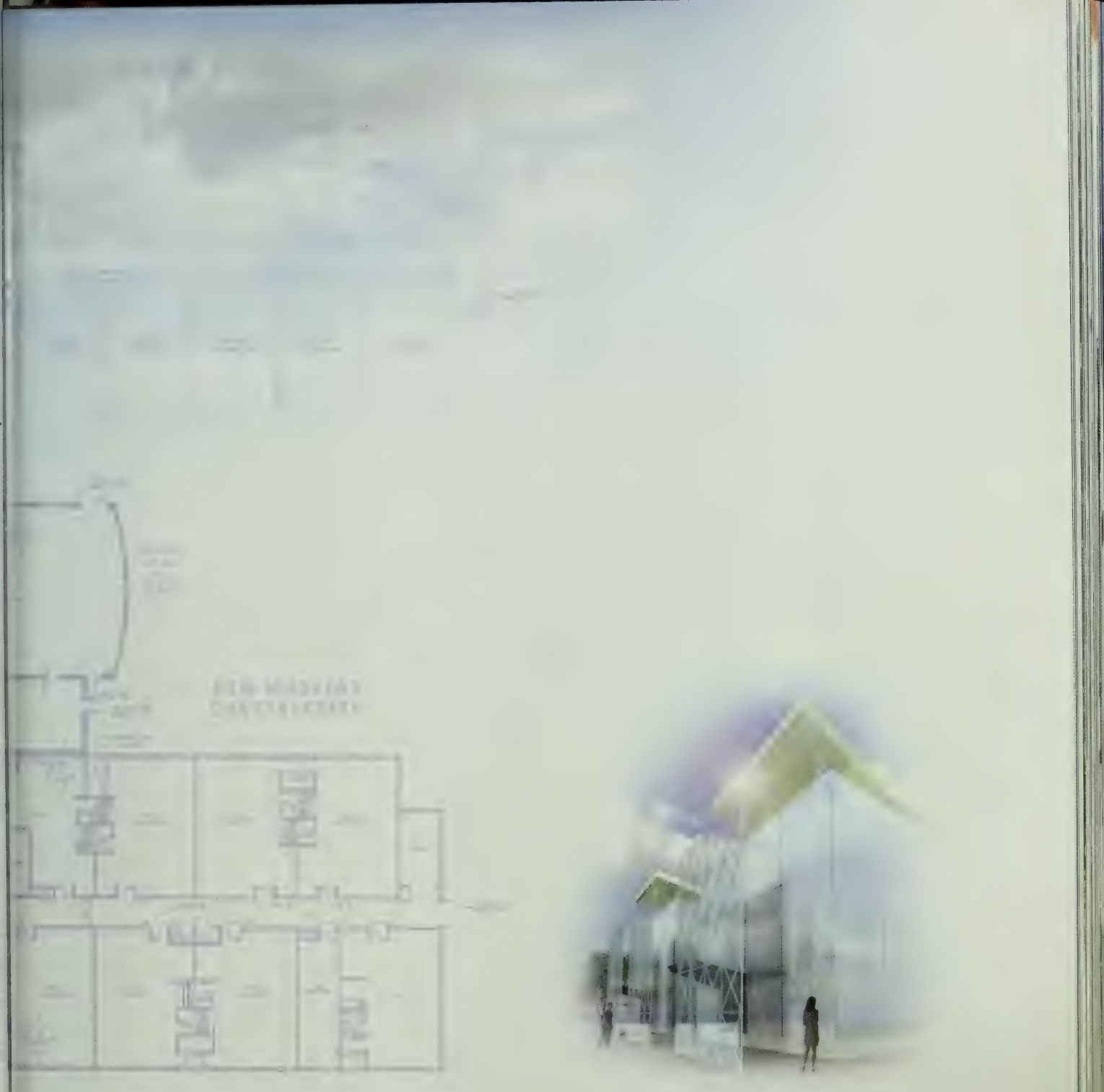
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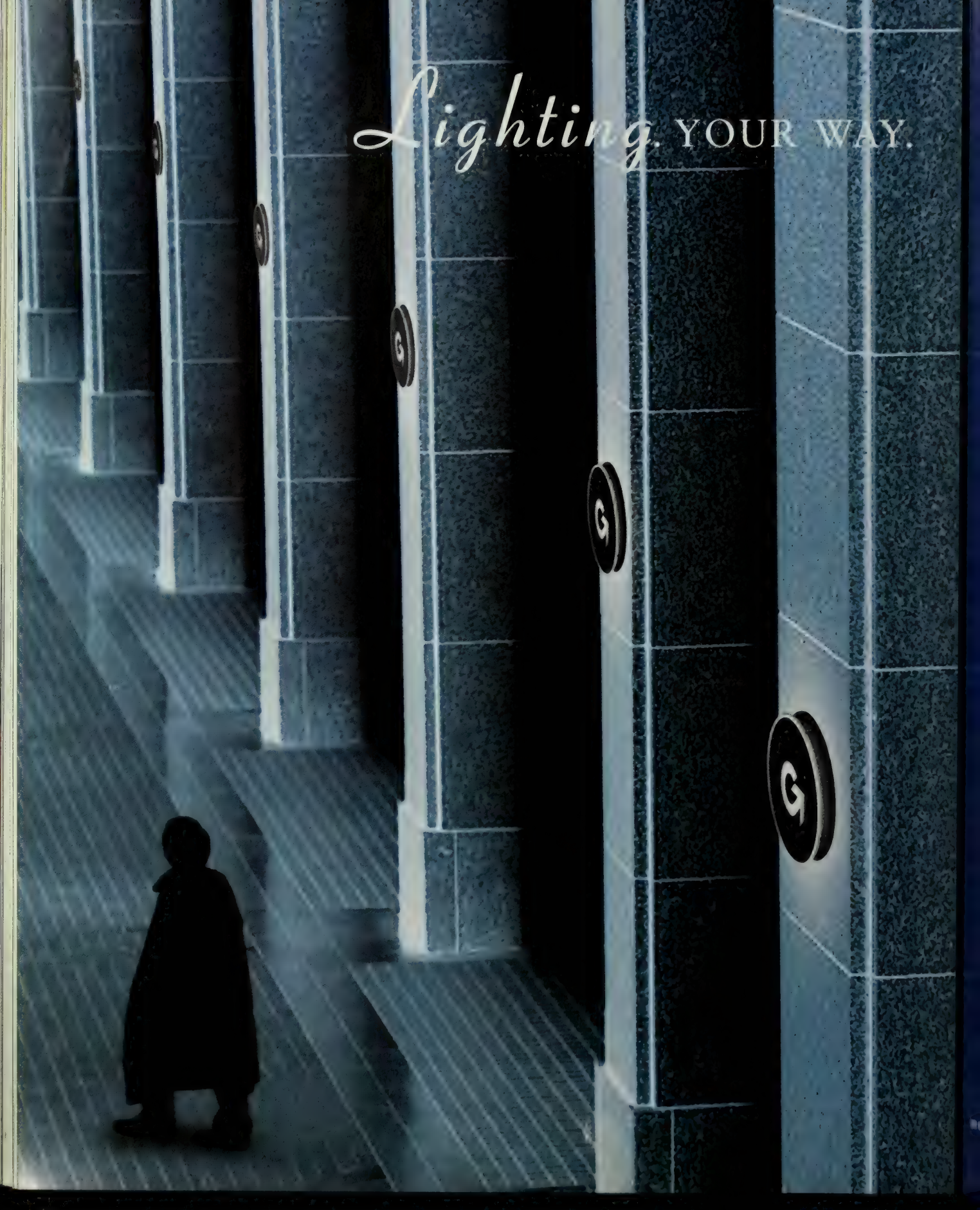
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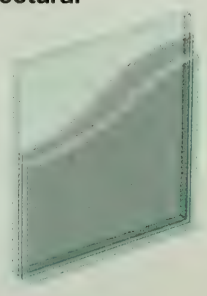


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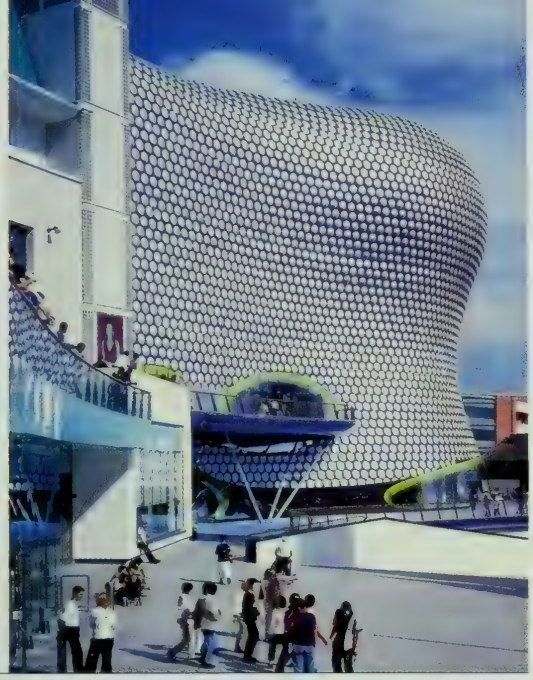
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On the Cover: *Sambo teaching kids around the kitchen table at Spencer House, where he lived and worked, Newbern, Ala., 2000. Photograph by Timothy Hursley*
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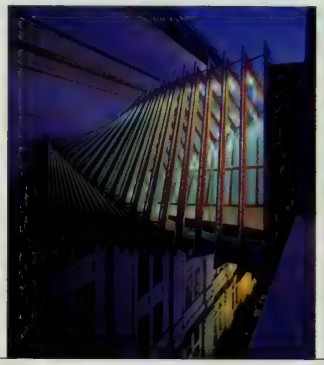
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268 Houghton Park Pedestrian Skyway, *New York*
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For additional bridge projects, go to Building Types Study at **architecturalrecord.com**.

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277 Introduction *by Deborah Snoonian, P.E.*

279 Architects Discover Bridge Design Can Be the Perfect Union of Art and Science *by Sara Hart**
Bridge design offers architects a course in craftsmanship.

289 Mass Transportation to Get Sleek and Daring
by Barbara Knecht
Moving people around the country offers design opportunities.

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334 Eliran Murphy Group, *New York City* *by William Weathersby, Jr.**
Guillermo M. Gomez Architect
A Broadway advertising agency features colorful, kit-of-parts workstations.

340 Huntsman Architectural Group, *San Francisco* *by Andrew Blum**
Huntsman Architectural Group
The firm's own office looks back to the midcentury designs of Arne Jacobsen.

347 Clicquot, Inc., *New York City* *by William Weathersby, Jr.**
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The U.S. subsidiary of a French vintner moves to a sleek loft.

352 Grip and Medium One, *Toronto* *by John E. Czarnecki, Assoc. AIA**
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Two multimedia offices show an architect's finesse with light and form.

357 Product Design: Gehry Furnishings *by William Weathersby, Jr.*
At the Milan Furniture Fair, Frank Gehry debuts three product lines.

359 Interior Products: Tiles of Spain/Cevisima Review
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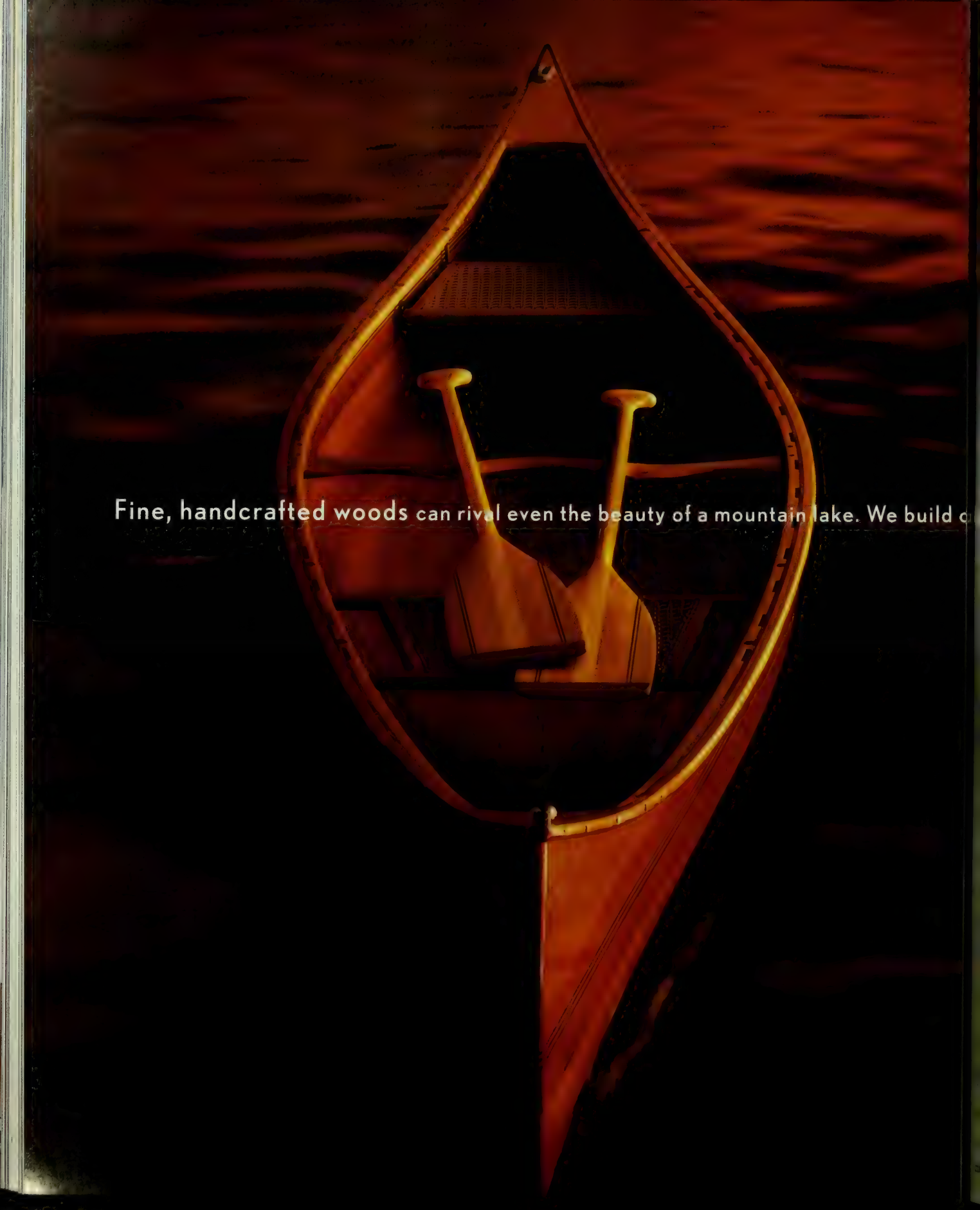
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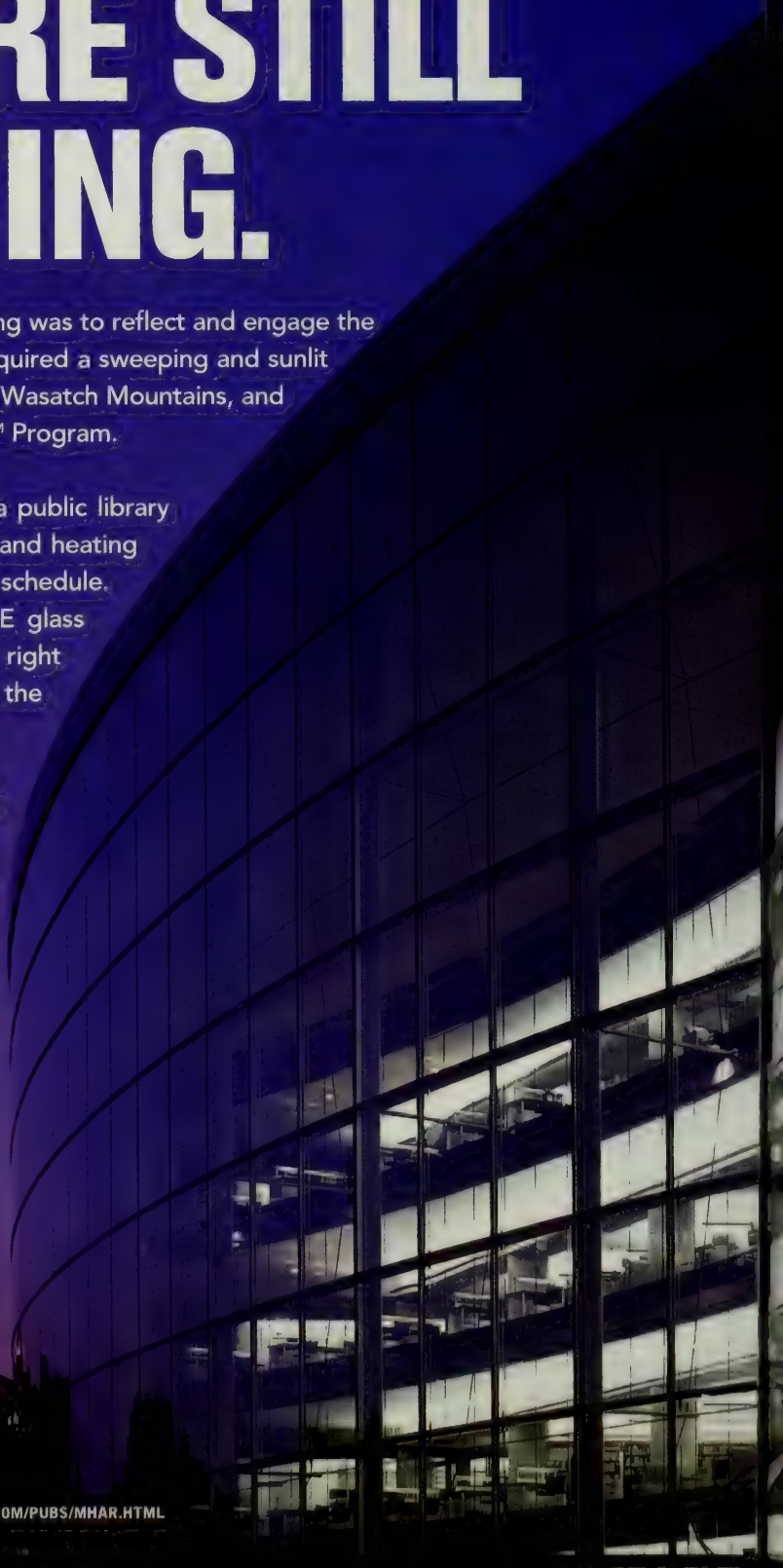
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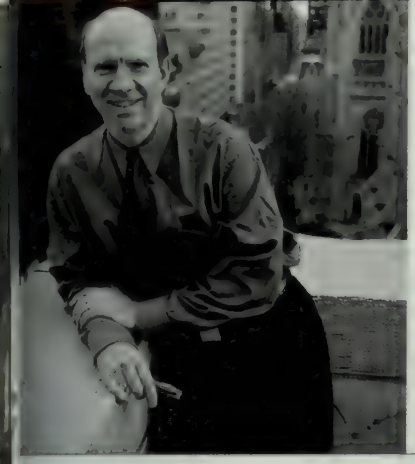


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Editorial

By Robert Ivy, FAIA

The World War II Memorial, recently unveiled on the Mall in Washington, D.C., embodies the term "neo"—Neoclassic, neo-Modern, even neo-Postmodern—and inhabits a nether region in the landscape between the Washington Monument and the Lincoln Memorial. While its axial placement and the prominence of its subject called for greatness, unfortunately the nation has received a compromised memorial muddled in its architectural language and tamely settled into the site.

The site is pleasant enough. On a sunny May day, tourists had already found the Kodak moments in all the cardinal directions, including a stunning view out toward the Lincoln Memorial beside a cascading waterfall. The fountains splashed on cue; taxicabs disgorged newcomers and a few veterans, who pointed out the states on the 56 pylons anchoring each end of the display. The crowds smiled at architect Friedrich St. Florian's design.

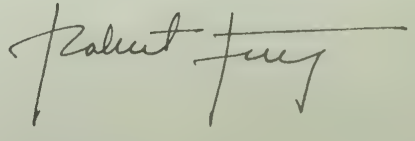
It could have been more. This memorial deserves our scrutiny because it commemorates the 20th century's great moral battle for the future of civilization—a conflict that mobilized worldwide resources toward a common end and cost millions of lives. After the human sacrifice, and the lands despoiled, such events call for majestic resolution. Instead, rather than represent confrontation, the World War II memorial resorts to large-scaled, neat symmetries, tying up opposing forces into a bow and leaving future generations with no clues to actual events. What a lost opportunity.

The fault partially lies in confusion of historic precedent and the principles that underlie historic expression. It's not about employing Classicism: Builders in Washington have reinterpreted classicism for more than 200 years, adapting canonical dictates to era and need. Having chosen a mode, in this case the ensemble cries for a clear voice—of Baroque genius, for example. In Bernini's hands, human engagement and triumph might have been rendered by godlike, overscaled forms rising from the water, or horses thundering through the spray, all movement, light, action, and poetry.

Instead, the memorial lacks authoritative identity. The twin locii of war have been reduced to opposing pavilions representing the Atlantic and Pacific theaters, which merely bookend the public space. Lining the pond, the surrounding pylons seem likewise devoid of meaning or emotional resonance, merely listing in a prosaic way the states and territories involved.

Architectural language appears to be complicit in this vacuous amalgam. The pavilions have been reduced to simple masses, reminiscent of Neoclassical Modernism from the 1930s, devoid of architectural ornament save naming. The truncated stone pylons have been cut to accept metal wreaths that hang from each column. Interwoven between them, a bronze rope by the artist Ray Kaskey provides ornamental respite from the severity, finding odd resolution in huge metal sculptures uncomfortably housed in the twin pavilions at each end. Four eagles in each pavilion hold a wreath, oppressed by a roof hovering too close overhead. Rather than triumphant, these Postmodern national raptors appear caged and cowed.

Although ARCHITECTURAL RECORD *criticized the original plans for the World War II Memorial, the finished project arrives at a moment poignant with international significance. We reassert that powerful design can affect the human psyche, reflect our values, and lift us to remembrance and reflection. Certainly the Washington Monument, in its sheer scale and unapologetic geometry, anchors the entire capital. The Lincoln Memorial, through figurative sculpture and actual words, evokes nobility of spirit; the Vietnam Memorial, pain through absence and abstraction. We should have asked for heroism from the most significant physical artifact poised between them, the last great monument to be placed on our own great lawn. Not a neo-memorial.*



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Letters

Thinking globally

In a profession whose environmental works range from the pyramids to the Uffizi Gallery to the Hong Kong Shanghai Bank to the Cincinnati Center for Contemporary Art to the Disney Performing Arts Center … and to a country, ours, the United States of America, that is inclusive to all, of course we have a focal issue on Chinese Architecture [RECORD, March 2004], and of course Zaha Hadid is recognized for architectural achievement.

When I am putting together that next wall section or listening to the needs of the client, it helps to know from the micro to the macro level that our profession in America does extend itself beyond its walls.

I find inspiration in a profession where every week, I see, think, or hear something architecturally related that moves or inspires me.

—Nancy A. Harper
Albuquerque, N.M.

Extended Architecture

I read with great interest Robert Campbell's critique "Okay, architects, lighten up—but don't lose your ideals in the process" [Critique, May 2004, page 67], in particular the point that architectural development has been characterized by mutually exclusive shifting foci. This is certainly true.

What we need is an architectural concept that addresses the totality that comprises the architectural problem and that unifies two poles—on one side the architect's personal capacity for insight, investigation, and imagination, and on the other the cultural reality of the site comprising its unique historicist, humanistic, and ecological characteristics. This concept defines an "Extended Architecture"—an architecture that takes its initial formal cues from the unique or particular historical, humanistic, and ecological characteristics of the project area as a whole. That applies both to the neighboring context in the case of a new building and to the existing building as the context for an interior/exterior renovation and/or rehabilitation. While taking its cue from the cultural reality of the site, Extended Architecture goes beyond simple contextualism and its inductive derivation of form from consideration of the constraints of local context resulting, at best, in a narrative architecture of good fit and perceptual continuity. Extended Architecture, on the other hand, juxtaposes the architect's personal (this is where the "playfulness" can come in!) reinterpretive capacity of underlying principles as deductive idea adding a universal or abstract dimension to architecture that supercedes the immediate environment—it is a poetic dimension that evokes meanings that are both related to the unique context from which they originate and are universal in that they touch on meanings and memories that are shared by other places. Extended Architecture is thereby a "lens" dialectically related to its context—an architecture that is both poetic and narrative—that is historically sensitive, ecologically sound, and reflects the special and unique character of the place and the people that it serves.

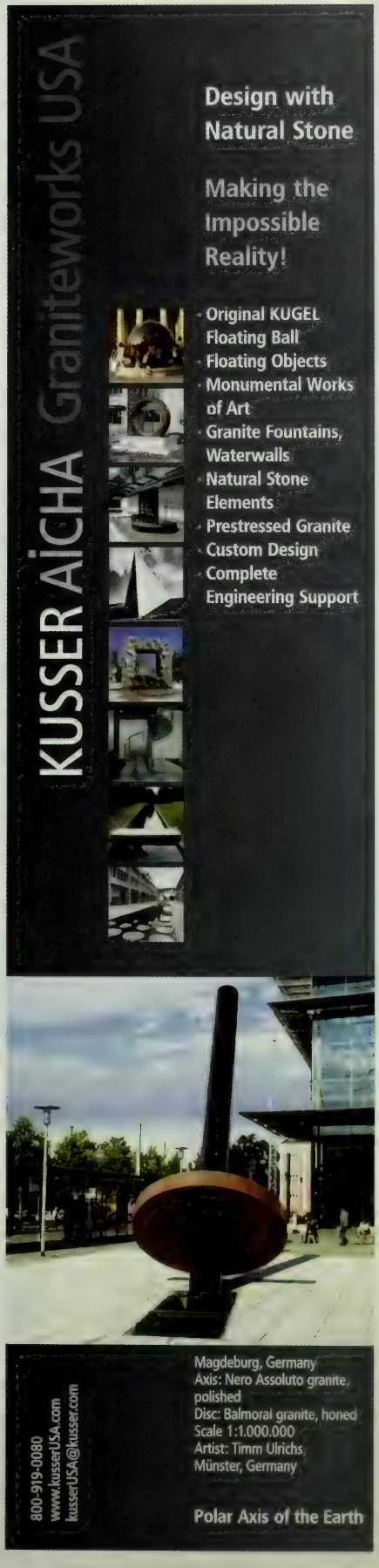
—Val Zarro, AIA
Pittsburgh, Pa.

Bringing down the house

I was both impressed and disturbed by the "feast of houses" offered in the April 2004 Record Houses issue.

On the one hand, I was impressed by the delicious collection of mouth-watering images. The stunning panoramas of ocean, desert, and sylvan landscapes were very appealing—dare I say "sexy." Upon closer examination, however, I wonder if this plate was served up empty. Do the seductive images obscure a troubling and continuing trend in the architectural press: promoting image over substance? I also wondered if the photogenic sites made these projects that much more publishable, and if creating beautiful architecture in a "high-end enclave … along a precipitously steep sandy cliff cradling a secluded beach" isn't a bit facile.

I was disturbed by this focus on "high-end enclaves" in exotic locations. Of the nine offerings in the 2004 Record Houses, only one was displayed in an urban context, and only one integrated energy-efficiency into its design. The program was typically a "vacation" house (i.e., not a primary residence), typically in a semiremote locale, on several acres of land. The houses average over 3,000 square feet, accommodate an average of seven occupants, for an average of nearly 500 square feet per person. In lieu of the excesses of the 2004 Record Houses, it is ironic that one of the houses is praised "in its unadorned simplicity … in counterpoint to … multigabled McMansions." I suspect that in the final analysis, few McMansions use as many resources to construct or maintain as do many of the 2004 Record Houses. My suspicion is that the bourgeois, late-20th-century architectural ideal of the private house in the country needs to be reevaluated. It goes without saying that I am left with an unpleas-



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ant taste in my mouth.

How can we serve a more palatable dish that is both tasty and visually appealing? Is it possible for architects to create innovative design solutions that are both socially responsible and environmentally sustainable? Now is the time for our profession to reevaluate our responsibility to educate ourselves, and our clients, and to promote truly integrated, sustainable architecture. By this I mean more than paying lip service to "green" architecture, and LEED certified architecture. As a profession, we should critique whether each and every project we do is sustainable. As shepherds of the built environment, we need to develop sustainable practice through legislation, activism, and our actions. I challenge ARCHITECTURAL RECORD to lead the way by publishing more works that are truly innovative, socially responsible, and environmentally sustainable. Then we will truly feast on a banquet of architectural delights.

—Kent Hikida, AIA
Via e-mail

Chicago on my mind

Just wanted to let you know how much I enjoyed reading last month's [May 2004] issue. I appreciate the way in which the articles were arranged to enliven the debate the issues raised; at least it appeared to be purposeful.

I cannot help but comment on the Soldier Field [Projects, page 114] and IIT [Projects, page 122] articles. First, I think that Mr. Giovannini does an excellent job of positing the issue, that is, Classical vs. Modern ideals vis-à-vis public space. The fact that the debate in this case is over a major sporting venue makes it even meatier. The contrast of Mr. Tigerman's opinion just adds flavor. I have to admit that my first take on his "collage" was that it was a commentary on professional sports. Although I think that his views, strangely enough, sound like those of a past era, it does reflect the opinion of the average citizen shackled with the visual and financial weight of these massive projects. His comments regarding irony in this context brought to mind some of the sexualized floor plans by Robert A.M. Stern that I was introduced to in college.

Also, as it relates to the IIT projects, I could not help but think about the criticism of "American arrogance" that we are constantly barraged with from Europeans. Placing Rem Koolhaas next to Murphy/Jahn was terrific. Here we have the intellectually cool European shamelessly wagging his artistic arrogance around on American soil. Is it me, or does it appear that this project is a cross between a night club and a 1970s-era bowling alley?

—Chris McCray
Associate Architect
Fitzpatrick.Butler Architects
Tyler, Tex.

Cities making their mark

I really enjoy it when RECORD focuses on a particular U.S. city in a single issue, such as May's Chicago issue, or last year's November issue about Los Angeles. This seems like a new tactic for the magazine, and I'm hoping that when you've covered all the biggies, you'll move to some of the smaller U.S. cities that are making their marks with good solid design and innovative solutions to housing, transportation, and sprawl. Hopefully, once you've covered San Francisco, New York, Dallas, and others, you'll move on to Portland, Seattle, and my favorite, San Diego.

—Rayne Adley
San Diego

Fans across the water

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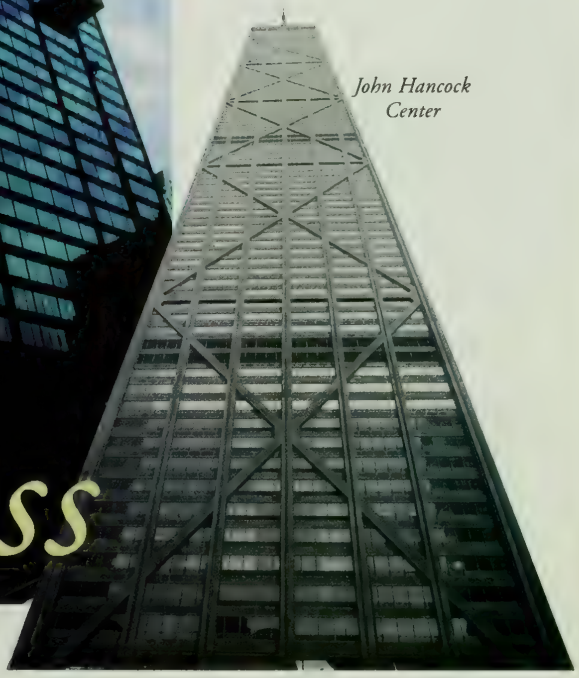


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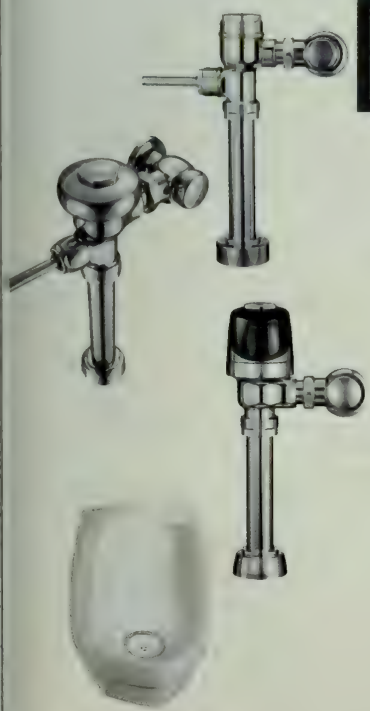
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Letters

tecture, RECORD helps me explore the latest designs of famous architects such Steven Holl, Tadao Ando, Zaha Hadid, and others.

I accidentally discovered back issues of the magazine at the library, which I have also found fascinating.

I will become a faculty member of Thammasat University's school of architecture in Thailand, the most prestigious and innovative school of architecture in Thailand. The magazine is very valuable to me, but with shipping, the subscription cost is very high. I wonder if there is a way for me to get the magazine without paying such high costs?

—Non Arkaraprasertkul
Bangkok, Thailand

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Corrections

The cover photograph of Soldier Field in the May 2004 issue should have been credited to Doug Fogelson (photo shown at right). Also, the Soldier Field and North Burnham Park Redevelopment project was completed as a joint venture between Lohan Caprile Goettsch Architects, with primary responsibility for the master plan and North Burnham Park project, and Wood & Zapata, with primary responsibility for the architectural design of Soldier Field. Joe Dolinar was the project manager for Lohan Caprile Goettsch on the assignment. A May News item about new designs for Los Angeles animal shelters [page 36] omitted Rossetti Architects, of Southfield, Michigan. The firm worked on the South Central Los Angeles Animal Shelter. The curator of *Unbuilt Chicago* [Exhibitions, May 2004, page 77] is actually Martha Thorne, associate curator of architecture at the Art Institute of Chicago. Dan Wheeler is the installation designer of the exhibition. To clarify, in the May News section [page 42], the winning team for the new urban park in Milan is Inside Outside (landscape/interior designer—Amsterdam, Netherlands); Mirko Zardini (architect/urban theorist—Milan, Italy); Michael Maltzan Architecture (architect—Los Angeles); Irma Boom (graphic designer—the Netherlands); Piet Oudolf (botanist—Hummelo, the Netherlands); Ro D'or (technical engineer—the Netherlands). In the April Correspondent's File [page 79], the correct credit for the National Ballet School is: Kuwabara Payne McKenna Blumberg Architects, Goldsmith Borgal and Company, architects in joint venture. Also in April, we'd like to clarify that in the April News article on San Francisco high-rises [page 44], the comments of John Parman, AIA, cochair of *Line*, the online journal of AIA San Francisco, were his own and do not reflect the opinion of AIA San Francisco, its board of directors, or *Line*.



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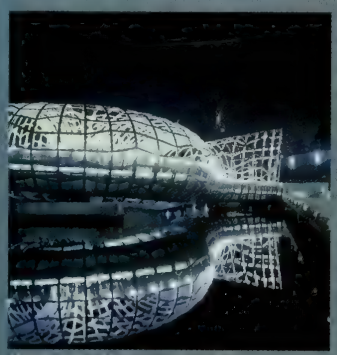


Samuel Mockbee, AIA Gold Medal Winner
We celebrate the life and work of the 2004 Gold Medal Winner, Samuel "Sambo" Mockbee (1944–2001). In this very special section, we feature the personal artwork of Sambo as well as projects from the Rural Studio. Also, an audio portion from the National Building Museum's roundtable discussion on Sambo is exclusive to our site.

AIA Honor Awards
This month our Web site features the 2004 AIA Honor Award Winners. This special section features examples of design excellence in the AIA award categories: Architecture, Interiors, Urban Design, Gold Medal Winner, Firm of the Year, and 25-Year Award.

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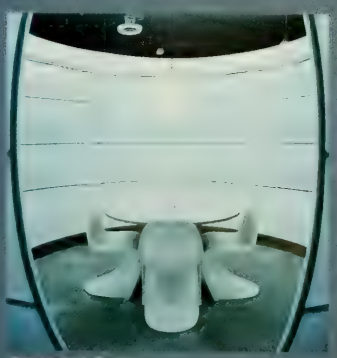
Building Type Study
Our Bridge coverage spans the globe. We feature ten bridges including a bridge in Croatia which also serves as a memorial, a bridge in London that is camouflaged in its urban setting, and other technologically advanced bridges throughout the world.

VISTAWALL



archrecord2
Our AIA Honor Awards coverage goes more in-depth with the recipients of the 2004 AIA Young Architects Award. Learn more about these five architects, the work they design, and their commitment to the profession and to their communities. Also, read about architect Chantal Aquin whose inventiveness contributed to the residents of Los Angeles' Skid Row.

Architectural Wood Doors



Interiors
In our quarterly Interiors section we examine the workplace. Whether it's the offices of a Broadway advertising agency or the headquarters of an international vintner, the architects use of materials and light create cutting-edge workspaces.

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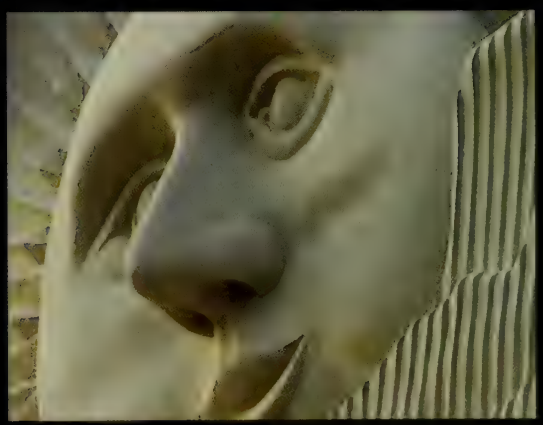
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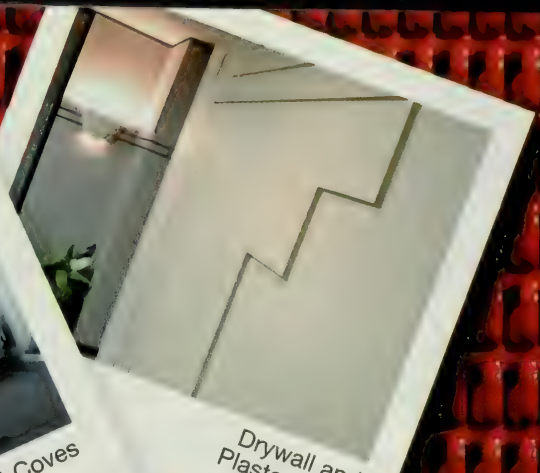
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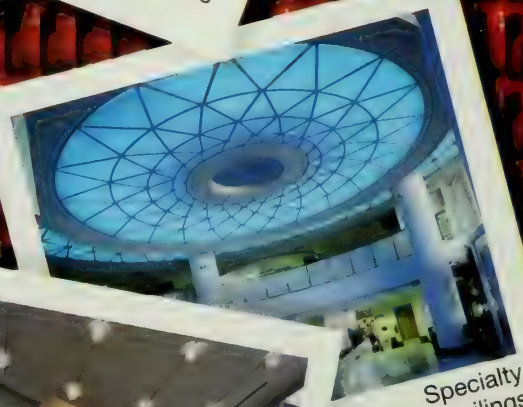
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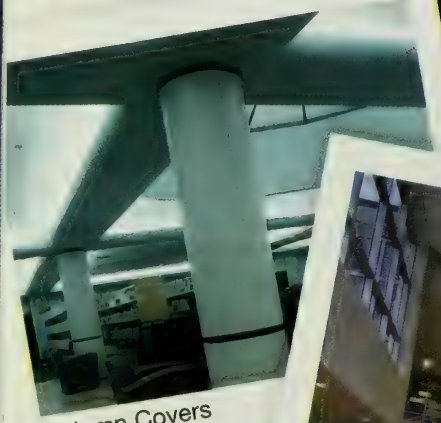
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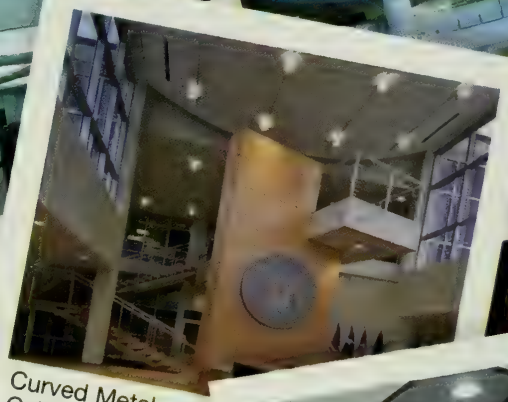
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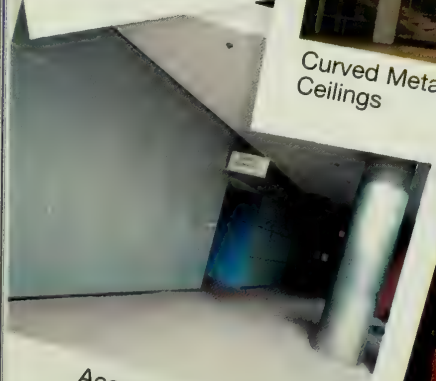
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REBUILDING LOWER MANHATTAN

Silverstein's court loss could put Trade Center plans in jeopardy

Because of his defeat in a May court case over insurance policies for the destroyed Twin Towers, real estate developer Larry Silverstein is facing a multibillion dollar shortfall in the funds that he needs to redevelop the World Trade Center. A federal jury in Manhattan ruled on May 3 that the majority of Silverstein's insurers owed one payout, not two, for the attacks.

Instead of a hoped-for $7 billion, Silverstein is now looking at compensation of between $3.5 and $4.5 billion, which is likely not enough to pay for all of the five office buildings called for in Daniel Libeskind's master plan.

Silverstein maintains that his financial setback in court will not significantly affect development of the site. "What he [Silverstein] will do is what every other real estate developer in the city does and has done for the past 50 years: traditional financing," says Dara McQuillan, a Silverstein spokesperson. "He will use Freedom Tower and the other office building as collateral for loans to build the next ones."

But with a 12.9 percent vacancy rate for class A office space in Lower Manhattan in April, there is widespread disagreement about Silverstein's ability to raise the estimated $7 billion that it will cost to build the five office towers. Some speculate that the Libeskind plan might have to be modified to include slimmer residential towers, and that Silverstein could even lose control of a part of the World Trade Center site. "I think that [Governor Pataki] is going to be able to ease him out," says Peter Slatin, a Manhattan real estate analyst. "There is no such thing as a master plan without money," adds Mitchell Moss, director of the Taub Urban Research Center at New York University.



Silverstein leaving court in February.

Some argue that scaling back the overall master plan and incorporating more uses, including residential, on the site would help ease Manhattan's housing crunch and address the concerns of those who wanted Ground Zero to have a more 24-hour-a-day atmosphere. "If the demand isn't there for office space, I'd expect that they'd consider a broad mix of uses," says Jeremy Soffin, director of public affairs at the Regional Plan Association.

Some New York City real estate analysts, however, say that Lower Manhattan should easily be able to absorb the 10 million square feet of office space envisioned in the Libeskind master plan even though it may take more than a decade to build all of it. "I don't think even if there was $7 billion available, that [Silverstein] would be building it now," says Michael Slattery, senior vice president for research at the Real Estate Board of New York. "I think that everybody always understood that the pace of development was going to be tied to market demand. Would it have been easier if Larry Silverstein had $7 billion than $3.5 billion? Without a doubt, but it still wouldn't have resulted in buildings being built with no tenants."

While there has recently been a relatively large amount of empty office space in Lower Manhattan, the recent uptick in the economy looks promising for Silverstein. The increase in new office space occupied in Lower Manhattan for the first four months of 2004, 701,000 square feet, is on track to equal the increase of 2.9 million square feet for 2000, when the city's economy was booming, according to Robert Sammons, director of research at Colliers ABR, a real estate services firm. "With the economy showing signs of recovery, I think that we will need to be prepared to get these buildings up and running, because in the last boom the reason that we lost a lot of people and businesses to New Jersey is that we couldn't put buildings up fast enough." *Alex Ulam*

WTC Briefs

Freedom Tower ahead of schedule, and Arad becomes a partner On May 5, New York Governor George Pataki announced that the 1,776-foot World Trade Center Freedom Tower would break ground on July 4, two months ahead of schedule. He added that the dismantling of the Deutsche Bank tower, adjacent to the Trade Center site, would begin in the fall and be completed by 2005.

Meanwhile, in late April, World Trade Center Memorial designer Michael Arad joined New York–based Gary Edward Handel + Associates as a partner. "I felt that this was a group of people that I could work with very well," says Arad, who adds that the company's skills and resources will help him best "serve the memorial." Firm principle Gary Edward Handel firmly maintains that the new partnership will not change Arad's vision for the memorial. "We have no desire but to help Michael with his vision," says Handel. Handel meanwhile brushed aside suggestions that Arad was too untested to be a firm partner. "I think if you spend time with Michael, he's remarkably talented and mature and has an incredibly clear vision of what he wants to accomplish. We have faith in his ability to perform not just on this project, but on ongoing work with the firm." *Sam Lubell*



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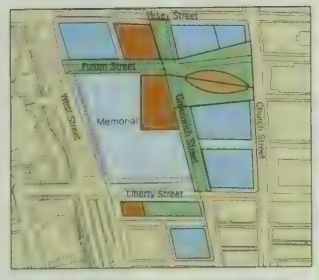
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REBUILDING LOWER MANHATTAN

Libeskind's World Trade Center guidelines raise doubts







Master plan diagrams look similar: Daniel Libeskind's (left), Cooper Robertson's (below left), and Beyer Blinder, Belle's (below) all feature comparable layouts. All faced similar site restrictions.

While perhaps the biggest uncertainty at Ground Zero is whether the new World Trade Center will take shape, other questions loom large. Many revolve around Daniel Libeskind's World Trade Center Commercial Design Guidelines, which were issued in February in a "confidential draft" form and were recently received by RECORD.

The guidelines are 267 pages long and their purpose, as stated, is to "describe the form, character, and standards of development that will support the master plan." They are separated into 10 thematic chapters focusing on areas of development, including "overall site development guidelines" and "public open space guidelines."

But a few members of New York New Visions (NYNV), a group helping establish design principles for Lower Manhattan, have argued that the guidelines are too vague and weakly worded to carry out Libeskind's plans for the Trade Center. Comments Bruce Fowle, FAIA, of Fox & Fowle Architects in New York, and a member of the NYNV executive board, "There are lots of 'shoulds' in there but very few 'shalls,' so there is no real control. There is no obligation to do anything. The most definitive thing was the sloped tops on the towers to follow Libeskind's radial scheme." Jordan Gruzen, FAIA, also with NYNV and with Gruzen Samton Architects in New York, adds that "there's confusion in the guidelines whether anybody has the power to make anything happen." Fowle also maintains that there is little provision for oversight in the plans: "They have yet to establish an administrative process, who is going to watchdog this, and who is going to make the decisions of where variances are going to be allowed," he says.

The guidelines are indeed filled with "shoulds" and "mights," although they also feature many "shalls" and "musts," as well as specifics about, for instance, sidewalk widths and the designs of building bases. Libeskind replies, "In the design guidelines, the major elements of the master plan are defined, maintained, and strengthened. Some have called them too loose, while others have called them too rigid. The intention is to strike a fair medium." Other building officials stress that the guidelines are still being developed and are not ready for scrutiny.

Meanwhile, Fowle also charges that Libeskind's designs for the site are starting to look similar to those originally proposed by Beyer Blinder Belle and Cooper Robertson back in summer 2002. Those plans were widely derided for a lack of imagination. All three plans, he points out, include an "assemblage of individualistic towers with a radial spiraling effect." The only difference, he says, is the Freedom Tower. Libeskind again begs to differ: "That's like saying a man and a chicken are the same because 98 percent is the same," he says. "It's that small difference that makes it radically different—the architecture, spirit, culture, space, design, and its meaning. The earlier plan was basically just an abstraction. There are so many subtle differences. How you articulate streets. How you make streets more important than the buildings themselves, and so on." *S.L and A.U.*

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REBUILDING LOWER MANHATTAN

9/11 memorials, not just in Manhattan

As the highly scrutinized designs for the World Trade Center and Pentagon memorials continue to progress, several smaller, more specific 9/11 memorials of interest have also been developing. In at least one case, even construction has begun.

On Staten Island, contractors working for New York City's Economic Development Corporation broke ground for Staten Island's memorial, which its architect, Masayuki Sono, calls "Postcards." Sono has been working to refine the design with another architect, Lapshan Fong, since he won the open competition in June 2003.

"When I started working on the competition," Sono said, "I thought the most important thing was to connect the victims back to us."

That led Sono to develop his design, which is an abstract representation of two curling postcards. Individual Staten Islanders who died on September 11 will each have individual profiles on "commemorative stamps."

North of New York City, Frederic Schwartz won a competition to design a memorial for Westchester County. Schwartz's design incorporates 109 steel rods, one for each Westchester victim, that swoop up from the ground to form a single spire.

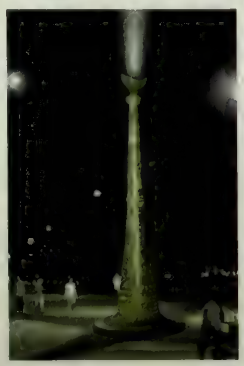
Schwartz is also a finalist in a competition to design a memorial for a pier on the Hoboken, New Jersey, waterfront. His entry, designed in collaboration with landscape architect Brian Tolle, would put a framed ramp on the pier.

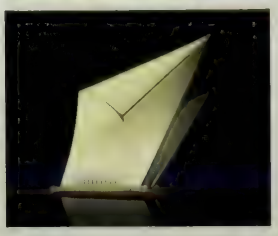
"The frame doubles as a lens through which to observe [the World Trade Center site] and reflect," Schwartz said at a public presentation at Hoboken City Hall in late April.

The FLOW group, comprising architect Jeanne Gang, artist Janet Echelman, and others, proposes an artificial island in the Hudson River, with a kinetic sculpture on top of 75-foot fiberglass columns. Architect Ralph Lerner and landscape architect Kate Orff propose a series of 53 lights (one for each Hoboken victim) on top of 60-foot copper poles, along the south side of the pier. A path along the edge of the pier would lead to what Lerner described as an "ear of personal contemplation that focuses the sound of the river and orients viewers back to the World Trade Center site." The fourth Hoboken finalist team of Krzysztof Wodiczko and Julian Bonder showed a commemorative path along the pier. Wodiczko cited his Polish ancestry as part of the background of his and Bonder's design. "In Poland," Wodiczko said, "we say that somewhere between the memorials, there is Poland."





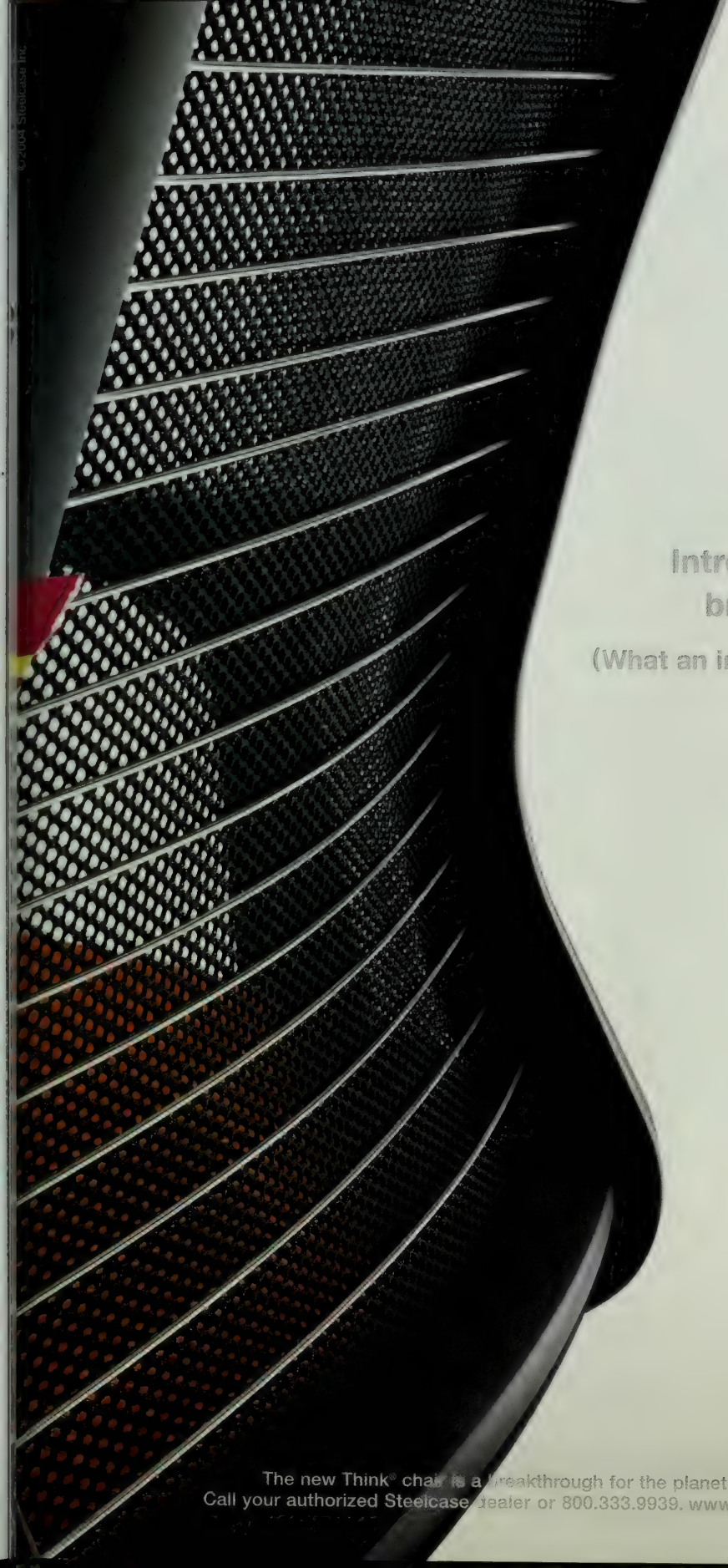




Memorial projects include Frederic Schwartz's plans in Hoboken (above) and Westchester (right), Masayuki Sono's in Staten Island (bottom right), and Robert Ressler's in Brooklyn (bottom left).

Two sculptors are also adding memorials to the New York area. Anish Kapoor, the Turner Prize–winning artist, has designed a monolithic sculpture to anchor the British Memorial Garden, which will honor the 67 Britons who died in the World Trade Center. The garden will be in Hanover Square in Lower Manhattan, and has been designed by landscape architects Julian and Isabel Bannerman. In Brooklyn, Robert Ressler has designed an abstracted speaking trumpet that will serve as a beacon on the 69th Street Pier in the Bay Ridge Section. *Kevin Lerner*

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MIT's Stata Center opens, raising issues about cost control

Last month, MIT officially opened Frank Gehry's much-anticipated Stata Center for Computer, Information, and Intelligence Sciences, the keystone of the school's ambitious billion-dollar campus expansion.

The sprawling deconstructivist complex, which includes asymmetrical forms, interconnected interior spaces, and alternating titanium and brick surfaces, was at one point projected to cost $200 million. The final cost was $300 million. While Steven Holl's award-winning 2002 Simmons Hall dormitory, once estimated at $60 million, came in at $95 million. Both serve as case studies of institutional investment in serious architecture, with its potential for cost overruns and expensive program changes.

MIT's experience is hardly unique. Rem Koolhaas's Illinois Institute of Technology campus center ran into similar problems. Works by the likes of Gehry and Holl come at a premium and increase the risk of overruns, employing costly materials and often introducing techniques unfamiliar to most contractors, notes MIT executive vice president John Curry.

The projects also ran into a perfect storm of national and regional economic conditions, according to MIT officials, Gehry, and Holl's project architect Tim Bade. Having been planned during the go-go 1990s, MIT put several major projects up for bid just as the dot-com bubble burst and Boston's Central Artery Tunnel project tied up much of the area's construction capacity. The "Big Dig" drove up costs 25 percent in the Boston area, according to Gilbane Construction Company's 2000 review of MIT's construction plan, Curry says. Current trends in materials and fuel prices point to higher project costs, according to analysts, who blame the high cost of steel on a global shortage and U.S. import tariffs.

The Stata Center evolved from an early-1990s scheme for a 150,000-square-foot, roughly $160 million building in keeping with MIT's Neoclassical main complex. A 1997 revision called for a 324,000-square-foot structure, at about $200 million.

The tight market and MIT's addition of below-ground parking, a pedestrian thoroughfare, and day-care and fitness centers dramatically increased costs. As of May, the official total for the 730,000-square-foot complex was $283.5 million, of which about $31 million went to design, according to project manager Nancy Joyce, who notes that much of the project's contingency fund went to cover construction costs.





The new Stata Center features folded titanium planes and an interior "student street."

Nonetheless, the Stata Center project was "in the norm for this type of lab building in the U.S.," says William Mitchell, head of the Media Arts and Sciences Program and architectural adviser to MIT president Charles Vest. On the Stata project, "We value-engineered, cut things, bit bullets," Gehry adds.

Legal delays, MIT's rush to occupy Simmons Hall by fall 2002 and its addition during construction of kitchen and dining facilities, contributed to that project's runaway costs, according to participants. As of early May, MIT was reviewing Holl's Simmons project for "errors and omissions," which are covered under the school's insurance policy, according to Curry.

In riding the late '90s investment wave and persevering through the downturn and project overruns, MIT's strategy has been one of "principled opportunism," says Mitchell. "It's an investment for a hundred years at the very least. You can't let short-term economic exigencies deter you." *Ted Smalley Bowen*



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New plans making London a skyscraper capital

In 1991, London had only two skyscrapers, by global standards: the 800-foot Canary Wharf Tower, designed by Cesar Pelli, and the 600-foot National Westminster Bank Tower. The city has strict rules on building height, and permission to build skyscrapers is granted on a case-by-case basis—meaning the ones that get through are notable landmarks, like Norman Foster's Swiss Re tower (page 218). Swiss Re's transformation of London's skyline unleashes the prospect of a new picture-postcard image of London as skyscraper development is set to catapult it into a new era.

Renzo Piano's London Bridge Tower, for instance, dubbed "The Shard of Glass," is as slim and sharp as Swiss Re is tubby and textured. At 1,016 feet, it will be Europe's tallest building. Its steeply sloping facades of white glass will make the tower seem partly to disappear into the sky. The building's design sparked controversy and claims that it would spoil the skyline; others have praised it for the elegant, tapering shape that prompted its nickname. The tower will house offices, a hotel, restaurants, apartments, retail, and three viewing areas.



Piano's London Bridge Tower.

The tower's approval last fall represents a triumph for Mayor Ken Livingstone's support of tall buildings. One year ago, Livingstone announced plans to add up to 15 new skyscrapers in the city by 2013, and immediately came under fire from government inspectors; he has defused their criticism by saying they're necessary to ensure London's economic health. "The Corporation of London needs to ensure that demand for office space can be met within the Square Mile [where much of the city's financial industry is located]," says Judith Mayhew, who heads up policy and resources for the Corporation of London, the municipal governing body of the city. "In this context, tall office buildings are becoming increasingly necessary as a result of the efficient use that they make of the limited land available."

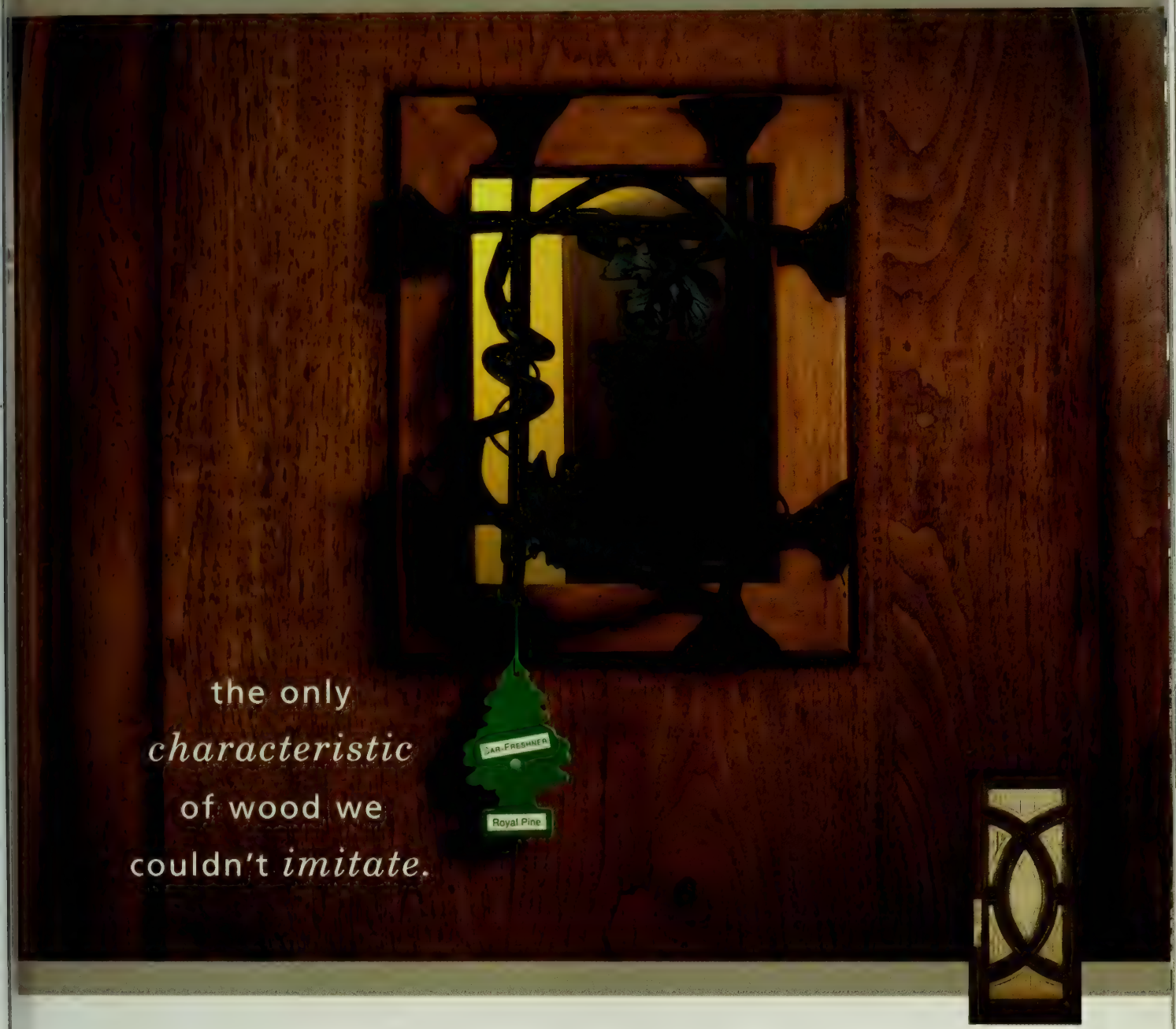
Numerous other projects point to the emergence of skyscrapers as a reality in the U.K.—the result of client demand for floor space as well as the iconic glory of their street presence. Recent tall buildings include Richard Rogers's 122 Leadenhall Street, whose slender, tapering form is strikingly similar to Piano's "Shard." The 48-floor glass tower's transparency reveals its structural steel frame, with color and light adding depth and animation to the north-facing facade. It rises to a height of 736.5 feet in the eastern cluster of tall buildings in London, which also includes the Heron Tower in Bishopsgate, designed by Kohn Pedersen Fox and approved in 2002. The 727-foot, 37-story tower arranges workplaces around a series of 11 triple-height atria. When completed in 2005, it will be one of the tallest buildings in the city. Mayor Livingstone reportedly joked "go back and make it bigger" when KPF initially presented a 590-foot tower.

Another skyscraper, the Minerva Building by Grimshaw Architects, also won recent planning permission. At 712 feet and 50 stories, it will provide more than 1 million square feet of office space. Its design is described by the architect as four open books standing with their spines erect, facing one another. Its facade, which enables natural ventilation, is projected to cut energy use by two thirds and eliminate the need for air-conditioning most of the year.

Even the architects of the London Eye have proposed a skyscraper design. Marks Barfield's 72-story Skyhouse would house shops, health clubs, nurseries, restaurants, and gardens. Yet most of the city's proposed skyscrapers are designed for purely commercial rather than residential or mixed-use needs.

Convincing evidence of the need for new skyscrapers in London will come as they fill up with tenants, theoretically. Meanwhile, the rigor of the mayor's policies and the Corporation of London's advocacy of good design will act in concert to ensure, with luck, that only exceptional projects are realized. "Our skyline has seen exciting and rapid change," says Peter Rees, chief planner for the Corporation. "The public can find that hard to accept, because it has been poorly served by architecture in the postwar period. Size isn't everything. I want to see buildings with flavor."

Lucy Bullivant



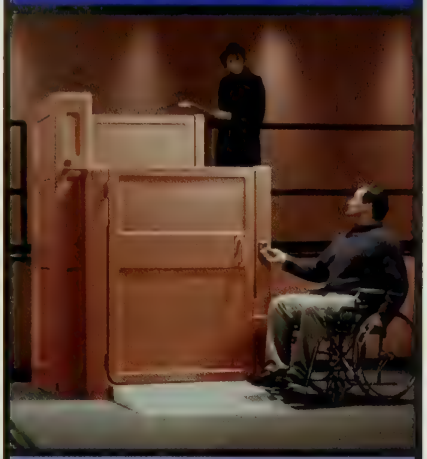
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Boston's new redevelopment zone (left) includes needed green space (in green, below).

New plans forming above and around Boston's "Big Dig"

Only a few hulking remnants of the I-93 platform clutter Boston's Surface Artery as the "Big Dig" wraps up, giving this swath of downtown the air of a movie lot at the end of a production. The next feature, something of a revival, is generating major buzz.

While much has been made of the above-ground projects capping the Big Dig, little has been done to clarify how they will work as a whole and mesh with the surrounding city. With this in mind, Boston officials have weighed in with a district-level scheme for the property along the fringes of the roughly 30-acre arc of reclaimed land, the new Rose Kennedy Greenway.

Urban planner Ken Greenberg of Toronto-based Greenberg Consultants presented the program at a pubic meeting recently, which also marked the kickoff of a 7-to-10-year public/private capital program to fund planning, improvements, and maintenance for areas adjacent to the artery. Construction of the Greenway's parks, cultural institutions, commercial, residential, and mixed-use projects is due to begin next year. The city has earmarked $1 million in its 2005 budget for the effort.

The district boasts access to the South Bay/Fort Point Channel, Boston Harbor, the new Harbor Islands National Park, and the Charles River.

"Boston is becoming a waterfront city again, but in a profoundly different way" than in its maritime and industrial past, says Greenberg.

The evolving plan calls for improving pedestrian access (both the transitions into the Greenway and throughout the waterfront area), widening sidewalks, planting trees, improving signage, and adding mixed-use and affordable housing to its waterfront. The integration scheme also promotes nighttime uses and year-round activities throughout the district and envisions connecting the area's multiuse trails to the waterfront district.

The Massachusetts Turnpike Authority is overseeing the $14.6 billion federal-state Central Artery/Tunnel Project and is heading up the development of the state-owned surface artery. Nearby property owners and business tenants, whose real estate values and quality of life stand to benefit, will be tapped for contributions toward improvements and upkeep, and the city will seek philanthropic support for events and activities to be staged in the Greenway, and projects like the proposed fountain, according to Maloney.

The city and the Massachusetts Pike Authority have agreed on the broad outlines of plans for parks along the Greenway, particularly in Chinatown and the North End, and are hammering out differences over the central wharf district parks, according to Maloney. The parks are expected to be finished in 2007 at the earliest.

Complicating matters, ownership and maintenance of the Greenway parks is under dispute, as Governor Mitt Romney fights the Massachusetts Turnpike Authority for long-term control.

"The city [wants] to have a governance structure that can be responsive to the mayor," says Mark Maloney, director of the Boston Redevelopment Authority, the city's planning and development arm. *Ted Smalley Bowen*



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National World War II Memorial opens in Washington

With little fanfare, the National World War II Memorial opened to the public in Washington, D.C., on April 29. Designed by a team led by Los Angeles–based architect Leo A. Daly, FAIA, and Rhode Island–based architect Friedrich St. Florian, AIA, the memorial honors the 16 million people who served during the Second World War, and the more than 400,000 who died.



The rainbow pool, backset with granite pillars.

Located between the Washington Monument and the Lincoln Memorial, the design is dominated by the Memorial Plaza, a round granite space lined with bronze plaques, and the Rainbow Pool, a curvilinear pond adorned with fountains on either end. Two 43-foot arches, signifying hostilities in the East and the West, mark entries on the north and south ends of the plaza, while 56 granite pillars, representing each state and territory, surround the plaza, connected by bronze oak and wheat wreaths.

The space is meant, describes St. Florian, to provide contemplative quiet, with simple stones looming above the tranquil (yet celebratory) fountain. "I didn't want to have any ornaments. I wanted just the details of the stones to speak," he says. Classical architecture, meanwhile, evokes the aura of stability and reason felt throughout most of the Capital, he adds. Critics, meanwhile, have complained that the memorial blocks the vista between the Washington Monument and the Lincoln Memorial, and that the design is too austere and unrefined.

The memorial was conceived in 1993, and construction began in September 2001. More than $195 million in cash and pledges have been received for the project, with $16 million from the federal government. At press time, an official dedication was scheduled to take place on Saturday, May 29—the Memorial Day weekend. *S.L.*

Paris unveils new ideas for Les Halles



Seura/Mangin employ modern lighting and colors.

The City of Paris recently unveiled four projects in competition for a complete redesign of the area known as Les Halles. For centuries, Les Halles had been the city's central market. By 1969, the neighborhood was choked by traffic, and the market was moved near Orly airport. In its place, the Forum des Halles, a half-buried commercial center, was built as the entrance to an important transportation hub. Then, in the 1980s, Paul Chemetov designed an extension to the underground complex, while a 10-acre park was created above. The result is a warren of disconnected spaces that together form the city's largest mall.

The city's main objectives for Les Halles are to create fluid and rapid access between underground levels and the city, to add value to the surrounding historic structures, and to improve security and the quality of the architectural landscape. Work must be phased to allow the 200 Forum businesses to stay open or be relocated.

The four finalists are AJN/Jean Nouvel, MVRDV/Winy Maas, OMA/Rem Koolhaas, and Seura/David Mangin. Nouvel's project covers the most area, adding buildings along both sides of the park and out into the neighborhood. Koolhaas has created transparent "control towers" that evolve from the underground layers like volcanic eruptions, while his "canyon" opens the view to the train concourses below. All four projects used the idea of a dynamic vertical opening leading down to the trains. Maas has then added a layer above ground with alternating areas of garden and transparency. Mangin's plan creates a central axis leading to the old commodities exchange building, converted into a new cultural and restaurant hub.

Projects are on display within the Forum, and Parisians have been encouraged to vote for their favorite. A winner will be chosen in late June, and first phase construction is to be completed by 2007. *Claire Downey*



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Adjaye to design Denver Contemporary



The Denver Museum of Contemporary Art recently announced its choice of David Adjaye of Adjaye/Associates, London, to design its permanent building.

The 15,000- to 20,000-square-foot structure will provide the museum—which currently has no permanent home—with spaces for galleries, education, lectures, and movies, as well as an outdoor sculpture center.

Adjaye was chosen among an impressive field that included TEN Arquitectos of Mexico, Snohetta of Norway, Rick Joy Architects of Arizona, Predock_Frane of California, and Gluckman Mayner Architects of New York. The selection process included extensive interviews from not only museum officials but from the public, in the form of open discussions.

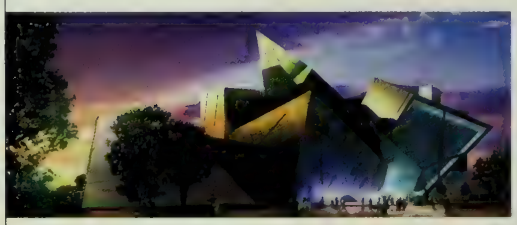
"We asked for an architect who would build a building that supports rather than defines the mission," notes curator and director Sydney Payton. "David had a direct relationship to the mission, and he had a clear understanding of contemporary art."



Adjaye (left) has already designed high-profile contemporary work like the Idea Store (above).

Adjaye/Associates, formed in 2000, has designed buildings for the Nobel Peace Center in Oslo, Norway, the Idea Store libraries in London (scheduled to be opened by the end of the year), and two libraries in Tower Hamlets, England.

Founded in 1996, the Contemporary is now located in a temporary space in Denver's Sakura Square. Daniel Libeskind's upcoming Denver Museum of Art is located less than a mile away, and the two buildings will give the city some of the most dynamic architecture in the country. "We hope it brings attention to Denver. It's part of an ongoing architectural dialogue with what's happening here," says Payton. The building is scheduled to open in late 2006. *S.L.*



Libeskind's Denver Museum will be just minutes away.

Piano's Los Angeles County Museum of Art Design approved

Renzo Piano's design (rendering, below) for an estimated $100 million upgrade of the Los Angeles County Museum of Art (LACMA) recently received board approval. Unlike the previous scheme, presented by Rem Koolhaas in 2001 and later abandoned due to cost, Piano blends old buildings with new ones while still creating a cohesive architectural experience.

Plans call for a new three-story, 80,000-square-foot Broad Contemporary Art Museum, plus a 20,000-square-foot, glass-enclosed entry pavilion along the axis of Ogden Drive. Additionally, there will be an 800-foot-long pedestrian concourse that cuts through the entire site, linking the new structures to the LACMA West, the former May Company building at Fairfax Avenue and Wilshire Boulevard, and the existing complex to the east. In order to create more visual unity, the buildings will all be wrapped in lightweight fabric screens.

Museum officials hope to break ground on the improvements by December 2005, and finish by summer 2007. *Tony Illia*



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New Entrance Completed for Brooklyn Museum of Art



The new entrance, made mostly of glass and steel.

The Brooklyn Museum of Art finally reopened its front doors in April, thanks to New York–based Polshek Partnership's front entrance and public plaza.

The $63 million project uses an elaborate roof of stepped, shingled glass to create a 15,000-square-foot entrance pavilion, projecting a modern face in front of the McKim, Mead and White Beaux Arts masterpiece. The glass steps recall the building's original, tall entrance stairway, while the space, notes Polshek principle James Polshek, will be used for gatherings and fund-raising events. But its main function, he adds, will be as "a meeting space for the community," like similar areas at the British Museum in London and the Louvre in Paris. "It's part of an emerging redefinition of the modern museum," says Polshek.



The redesign also reshapes 82,000 square feet of public space, with new trees, plantings, and pavings organized in a formal semicircular configuration. Already a highlight of the space for visitors is a new fountain, designed by Los Angeles firm WET Design (which designed the Bellagio fountains in Las Vegas), which uses "dancing" water jets to create a kinetic show.

Other improvements include upgraded public amenities, a new floor surface and air-conditioning for the lobby, and a restoration of the Eastern Parkway facade of the building. The project's first phase took place from 1998 to 2000, while this most recent phase began in 2000. *S.L.*



Ford Calumet winner announced

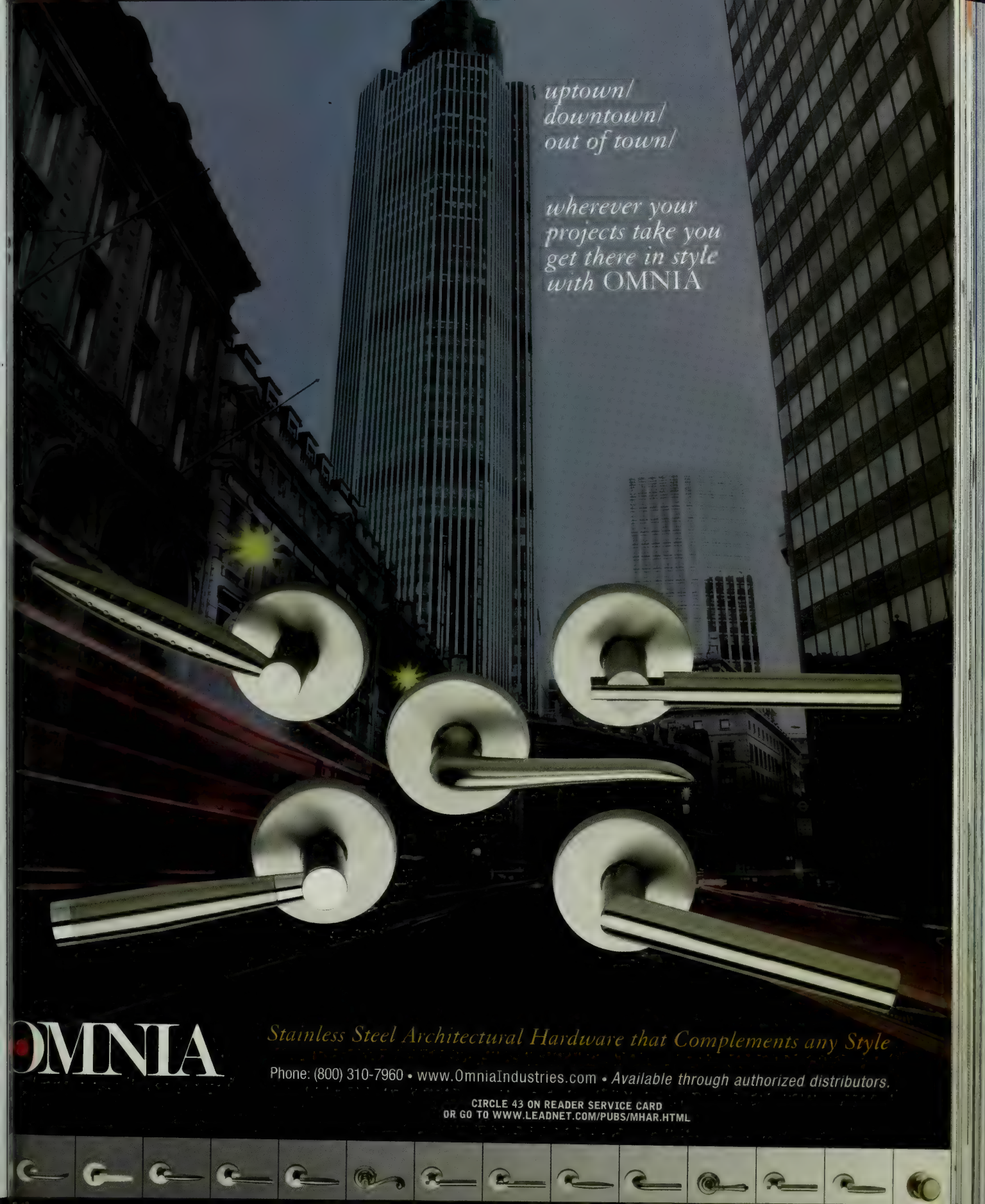
Studio Gang Architects, led by Jeanne Gang, AIA, and Mark Schendel, AIA, were announced winners in April of a two-stage international competition for the $6.8 million Ford Calumet Environmental Center in Chicago.

The proposed building's setting on the city's far-southeast side is an undeveloped wetland surrounded by heavy industrial uses that have ravaged the area's natural landscape for the past century. Sponsored by the Chicago Department of Environment, the Illinois Department of Natural Resources, and Chicago's Environmental Fund, the building will utilize LEED standards for sustainable building.

The 26,800-square-foot, single-story structure (rendering, above) will be built to a seed-shaped plan with a glass wall along its south facade. Shaded by a porch constructed of steel rebar and other discarded man-made materials found near the site, the building is intended to sit lightly on the land. Salvaged bundles of steel columns will be driven into the marshy site to support the structure. Slag will be used as a surface material in the exterior garden and as aggregate for terrazzo in the interior floors.

"We're weaving discarded materials into something more refined, like a basket," explains Gang. The firm's design was chosen from an original field of 108 architects representing seven countries.

Questions were raised after the announcement, when it was revealed that Studio Gang's predecessor firm, Studio Gang/O'Donnell, had prepared the initial program statement for the project, but David Reynolds, first deputy commissioner at the Department of Environment, points out that the draft was three years old, had changed in scope, and was for a different site. The jury's recommendation is currently being reviewed by the City's Public Building Commission. The building is scheduled to open in 2006. *Ed Keegan*

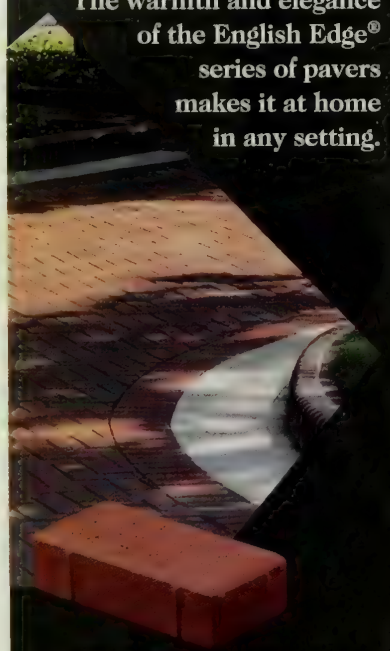

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AIA names the top 10 green projects for 2004

On Earth Day, April 22, the AIA's Committee on the Environment (COTE) named its seventh annual Top 10 Green Projects, a diverse collection of structures ranging from new construction to renovations, a single-family residence built in modular form to a large office building for a pharmaceutical company.

The top projects hail from seven states and Canada, representing more geographic diversity than last year's winners, half of which were located in California. The winning projects are The **Solaire** in New York City, by Rafael Pelli of Cesar Pelli & Associates Architects; the **City of White Rock Operations Building** in British Columbia, by Busby + Associates Architects; **Factor 10 House** in Chicago, by EHDD Architecture; the **Genzyme Center** in Cambridge, Massachusetts, by Behnisch, Behnisch & Partner; **Greyston Bakery** in Yonkers, New York, by Cybul & Cybul Architects and Maya Lin; the **Herman Miller Building C1** in Zeeland, Michigan, by Krueck & Sexton Architects; **Lake View Terrace Library** in Los Angeles, by Fields Deveraux Architects & Engineers and Greenworks; the **Pierce County Environmental Services Building** in University Place, Washington, by the Miller/Hull Partnership; **The Plaza at PPL Center** in Allentown, Pennsylvania, by Robert A.M. Stern Architects; and the **Woods Hole Research Center** in Falmouth, Massachusetts, by William McDonough + Partners.



The Lake View Terrace Library in Los Angeles.

The variety of designers and projects signifies a nascent mainstreaming of sustainability, notes COTE chair Mark Rylander, AIA. "Our emphasis has moved from nature centers and buildings that are clearly trying to accomplish environmental goals to a broader spectrum of building types whose programs include strong social and environmental commitments. We want to ensure that COTE isn't viewed as the solar energy wing of the AIA, but rather represents the core mission and values of all architects." *Deborah Snoonian, P.E.*



White Rock Building.

Preservationists lose fight for Two Columbus Circle

A planned redesign of Edward Durrell Stone's legendary but long-vacant 2 Columbus Circle moved one step closer to reality on April 15, when New York State Supreme Court Justice Walter Tolub dismissed a suit brought by local preservation groups. The suit sought to block the planned May sale of the building by New York City to the American Museum of Arts and Design (formerly the Craft Museum), contending that the City Landmarks Preservation Commission, by not holding public hearings, had failed to produce the comprehensive environmental impact review required for such property transfers.

Portland architect Brad Cloepfil, AIA, has proposed a renovation for the structure, the former Huntington Hartford Museum of Art, that replaces the existing monolithic marble facade with a semi-translucent cladding of terra-cotta tiles and geometric glazed incisions. The interior would feature a new atrium and circulation space, while a basement auditorium would be restored. Kate Wood, executive director of Landmark West, one of the groups that brought the suit, says they are considering their options, which include an appeal, additional lawsuits, and intervention or advocacy from the National Register of Historic Places and the National Trust for Historic Preservation. "The legal story for this building is not over," she says, but "the ultimate venue might be the court of public opinion." *Thomas De Monchaux*

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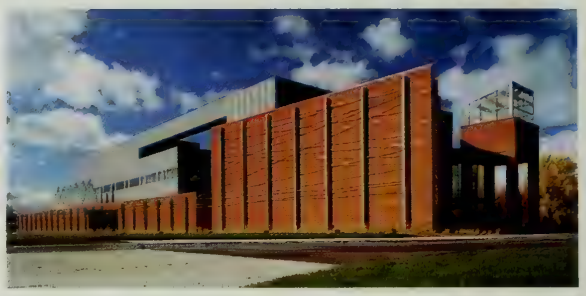
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Holocaust Center's design conjures up difficult memories

The Holocaust Memorial Center in Farmington Hills, Michigan, outside Detroit, opened its controversial new building last month.

The structure, designed by Neumann/Smith & Associates of Southfield, Michigan, uses steel cable wrapped around a redbrick facade to evoke imagery of a Nazi concentration camp. Furthermore, glass and brick towers along the building's periphery give the impression of guard towers, while alternating grays on the facade of some buildings in the complex are meant to remind visitors of the uniforms of Holocaust prisoners.



The Center's walls look like the gates of a concentration camp.

"I think you need a building that is strong enough to at least make people wonder and to make people want to come inside," says Ken Neumann, a principal at Neumann/Smith. The 50,000-square-foot, two-story building, designed in 2001, replaces the museum's former location in West Bloomfield, Michigan; it was the country's first Holocaust museum. Inside the Memorial Center stand exhibits depicting the horrors of the time to the post-Holocaust period. The museum campus also includes a Museum of European Jewish Heritage, and the International Institute of the Righteous, meant to publicize altruistic acts throughout history.



Glass and steel structures are reminders of watchtowers.

While Neumann acknowledges that the design has prompted some consternation for its brutal and difficult imagery, he says that, overall, people are quite supportive. "It's a shame we've hurt people with the design, but it's violent as that time was violent. Most have felt this is a positive thing. It tells their history. You want to show young people the result of not caring about their fellow man." *S.L.*

McGraw-Hill hosts construction summit in Beijing

As word spreads that China is undergoing the world's largest construction boom, many more people are taking an interest in the Middle Kingdom. It was in this spirit that professionals from around North America, China, and the world gathered in Beijing's Kempinski Hotel from April 14–16 for the 2004 Global Construction Summit. The conference, convened by McGraw-Hill Construction, ARCHITECTURAL RECORD's parent company, was the first of its kind, bringing more than 500 contractors, developers, designers, and officials together to discuss the opportunities and challenges that lay ahead in the burgeoning Chinese construction market.

The summit's plenary meeting addressed the issues facing the Chinese market in the face of unprecedented growth. Other sessions dealt with how to get work and how to get paid, breaking into the market, creating successful results, and balancing the needs of development and sustainability. ARCHITECTURAL RECORD's editor in chief, Robert Ivy, AIA, led two panel discussions with architects and engineers with considerable experience in China. They shared their experiences, discussing the opportunities, their hopes for the future, and the foreboding challenges, from regulatory differences to the large cultural chasm between China and the West. ***Daniel Elsea***







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A third New York high-rise for Meier



Fresh off the completion of his luxury condominiums on Perry Street along the Hudson River, Richard Meier is planning a similar luxury hi-rise (above photo, far right) next door.

The 16-floor, 31-unit tower, at 165 Charles Street, will very closely resemble the architect's two designs at 173-176 Perry, just adjacent. All will be tall, Minimalist luxury buildings made primarily of glazed glass and steel. Unlike the Perry Street project, Meier will also be designing the 11- to 22-foot-tall interiors of the new building. These will include leather seats similar to those Meier designed for the Getty Center in Los Angeles. The tower's ground floor will also feature more than 1,500 square feet of commercial space.

"Charles Street gives us the opportunity to further develop and evolve the design of my first two towers," says Meier. "It's like music. One note is nice, but as you add notes, you can create something different." Completion is scheduled for spring 2005. *S.L.*



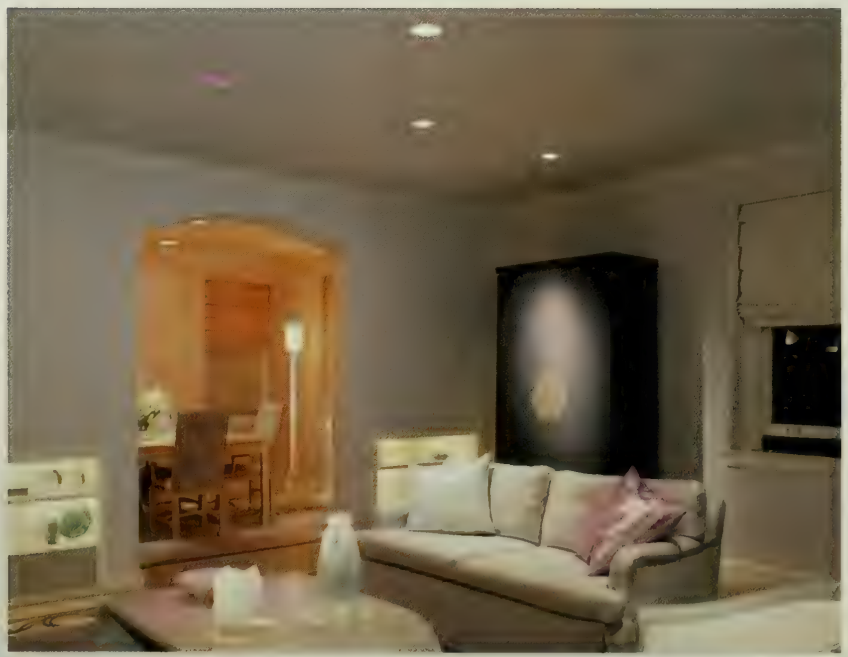
Chipperfield planning museum in Iowa

British architect David Chipperfield is designing his first museum project in the continental United States: the Figge Art Museum (FAM) in Davenport, Iowa (above, at right).

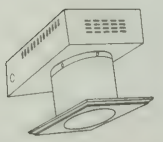
Founded in 1929, FAM, formerly known as the Davenport Museum of Art, has transformed itself from a small-scale local space to an ambitious institution. The new museum, located on the city's downtown Mississippi River waterfront, reflects the change. The building, and its desirable location, will allow it to continue to expand, museum officials say.

The $34.5 million, 100,000-square-foot museum will be surrounded almost completely with opaque and transparent glass surfaces and fritted with horizontal banding to define the formal elements. It will have an inner and outer skin: The inner will be composed of double-glazed glass and perforated-metal panels, and the outer will be made of fritted and clear glass and will act as a rain and wind screen. An outdoor plaza will provide a sculpture garden and public space. The museum highlights a $113.5 million initiative to revitalize the city's downtown area. Opening is scheduled for July 2005. *S.L.*

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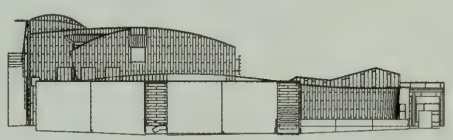
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Weber State University – Ethel Wattis Kimball Visual Arts Center, Ogden, UT, USA, Client: Weber State University, Ogden, UT, USA, Architect: Prescott Muir Architects, Salt Lake City, UT, USA

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News Briefs

Renovation for Yale Art Gallery Yale University Art Gallery, the oldest college museum in the U.S., has begun restoration of its main building, originally designed by Louis Kahn and opened in 1953.

The Gallery was Kahn's first significant commission, and is considered one of his masterpieces. The



The Yale Art Gallery will be upgraded.

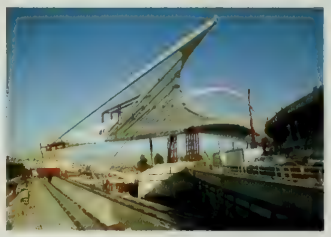
renovation is being undertaken by Polshek Partnership Architects in New York, which is also working on the master plan for the Yale Arts Area.

The building, known for its intensely quiet, spiritual atmosphere and signature tetrahedral ceiling, will be closed for the restoration until spring 2006. The gallery will display its collections of American paintings, sculpture, and decorative arts in the Gothic-style wing.

The restoration will address much-needed structural issues, such as window and wall repair and upgrading of the roof, and it will open the building up by removing partitions scattered throughout.

"I was a student of Louis Kahn's in 1954," says partner Jim Polshek in a written statement. "The opportunity to restore this early masterpiece to the architect's original vision and to protect it for the future is extraordinary." *S.L.*

Workers begin to install Olympic Stadium roof After long delays, contractors recently began to install the roof



Olympic roof slides into place.

of the Olympic Stadium in Athens. Designed by Santiago Calatrava, the roof covers 269,000 square feet and is made of massive white steel and tinted Plexiglas. Assembly was completed in mid-April, and now builders are sliding the tubular steel arches into place on top of the stadium.

The stadium was first employed in 1982 and has since been refitted for the games. Calatrava is also designing the sports complex master plan, the roof for the Olympic Velodrome, and landscape and sculptural elements, such as the "Nations Plaza" public space and the undulating "Nations Wall." *S.L.*

Finalists named for Vietnam Veterans Memorial Education Center Four teams have been selected in the second round of competition for the Vietnam Veterans Memorial Education Center, which will complete the assemblage of structures on Washington, D.C.'s National Mall.

The four teams are Ann Beha Architects, Architectural Research Office, Michael Graves & Associates, and Polshek Partnership.

According to Jan E. Scruggs, president of the Vietnam Veterans Memorial Fund, the teams are awaiting completion of site analysis before submitting final designs. The 20,000-square-foot facility of exhibition and support spaces is expected to be dug into an elevated area halfway between the memorial and Constitution Gardens. In June, the jury will choose the winning team. The fund hopes to raise $25 million for the center's construction within three years, break ground in 18 months, and complete the building in 2009. *Andrea Oppenheimer Dean*



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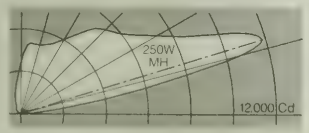


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Dates & Events

New & Upcoming Exhibitions

Zaha Hadid
New York City
June–July 2004
Paintings, drawings, and indoor and outdoor objects by the recent Pritzker Prize–winning architect will be featured at Max Protetch Gallery. Call 212/633-6999 or visit www.maxprotetch.com for more information.

Liquid Stone: New Architecture in Concrete
Washington, D.C.
June 19, 2004–January 23, 2005
A survey of cutting-edge architecture in which the use of concrete is an essential aspect of the design. The exhibition will demonstrate that architects are using concrete to achieve incredibly varied—sometimes even diametrically opposed—aesthetic objectives. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for further information.

Ronan and Erwan Bouroullec
Los Angeles
June 20–October 18, 2004
The first North American exhibition to focus on the work of French designers Ronan and Erwan Bouroullec. The brothers have burst on the international design scene in the past few years with their futuristic furniture, products, and interior designs. At the Museum of Contemporary Art. For information, call 213/621-2766 or visit www.MOCA-LA.org.

Beyond the Box—The Architecture of William P. Bruder
Los Angeles
July 15–October 14, 2004
An exhibition of Will Bruder's work will be on view at A+D Museum. For more information, call 310/659-2445 or visit www.AplusD.org.

Ongoing Exhibitions

Rene Burri Photographs
New York City
Through June 5, 2004
The exhibition focuses on Burri's architectural photographs, including images of Le Corbusier and his work, such as the Chapel at Ronchamp; the structures of Mexican architect Luis Barragan; Oscar Niemeyer's buildings in Brasilia; and the preparations for the Montreal Expo in 1967. At the Gallery at Hermes. For information, visit www.hermesofparis.com.

Petra Blaisse: Harvey S. Perloff Chair Workshop
Los Angeles
Through June 11, 2004
Amsterdam-based designer Petra Blaisse explores a fascination with unique materials through wall coverings and built projects created since 1991 with her firm, Inside Outside. Blaisse holds the Harvey S. Perloff Chair for spring quarter in the UCLA department of architecture and urban design. She conducted a five-day workshop with students, creating a site-specific work that is included in this exhibition. At the Perloff Gallery. Visit www.aud.ucla.edu or call 310/267-4704.

Subway Style: Architecture and Design in the New York City Subway
New York City
Through June 18, 2004



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Celebrating the 100th anniversary of the New York City subway system, the exhibition explores the aesthetics of the subway, featuring a broad range of historic artifacts, archival documents, drawings, and vintage and contemporary photographs from the collection of the New York Transit Museum. At the UBS Art Gallery. Call 212/713-2885 or visit www.ubs.com.

Drawn by the Architect
Amsterdam

Through June 19, 2004
Now that the computer is changing the way drawings are produced and filed, do architects still sometimes put their ideas down on paper and, if so, in which phases of the design process do they do that? ARCAM collected spectacular original sketches ranging from doodles, notes, and travel impressions to detailed drawings and presentation sketches—sketches done with pencil, paint or felt-tip pen on paper, in notebooks or still on the roll, made for oneself, clients, or a book. At Architectuurcentrum. Call 020/620-4878 or visit www.arcam.nl.

Envisioning Architecture: Drawings from the Museum of Modern Art, New York
Washington, D.C.
Through June 20, 2004
The broad spectrum of 20th-century architecture and the depth of its artistic expression are revealed in this selection of works from MoMA's extraordinary collection of architectural drawings. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

City Works
Los Angeles
Through July 1, 2004
An exhibition organized by Cityworks Los Angeles Communities Under Construction with participation by all L.A. design and architecture schools. At A+D Museum. Call 310/659-2445 or visit www.AplusD.org.

The Austrian Phenomenon: Concepts, Experiments—Vienna Graz 1958–1973
Vienna
Through July 12, 2004
The exhibition examines this Austrian avant-garde and attempts to come close to providing an overview of the conceptual and experimental tendencies that emerged in Vienna and Graz between 1958 and 1973. At Architekturzentrum Wien. Call 431/522-3115 or visit www.azw.at for information.

Material Trends in Modern Italian Furnishings
New York City
Through July 14, 2004
The region of Lombardy is the center of Italian design ingenuity, with unparalleled excellence in creativity and manufacturing values. The exhibition features recent products in furniture, textiles, consumer electronics, and fixtures from Alias, Artemide, Pierantonio Bonacina, Brionvega, Bticino, Caimi Brevetti, Con&Con, Danese, Flexform, Futura, Gruppo Industriale Busnelli, Kartell, Luceplan, Merati, Nemo, Paola Lenti, Porro, Regia, Tronconi, Serafino Zani, and Zucchi. This exhibition coincides with the 16th Annual International Contemporary Furniture Fair. At Material ConneXion. Call 212/842-2050 or visit www.MaterialConneXion.com for more information.



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Modern Means: Continuity and Change in Art, 1880 to the Present
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A landmark survey of more than 300 works of architecture, design, painting, sculpture, drawing, prints, photography, and electronic media selected from the extensive collection of The Museum of Modern Art in New York. The exhibition explores the blurred relationship between "modern" and "contemporary" to establish an effective narrative between past and present. At the Mori Art Museum. For more information, visit www.mori.art.museum.

Affordable Housing: Designing an American Asset
Washington, D.C.
Through August 8, 2004
This exhibition demonstrates that low-cost housing need not be of low quality and explores the potentially far-reaching benefits of good design for residents and their broader communities. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Symphony in Steel: Ironworkers and the Walt Disney Concert Hall
Washington, D.C.
Through November 28, 2004
This exhibition presents more than 100 compelling photographs by Gil Garcetti, including spectacular images of the completed building. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Jorn Utzon: The Architect's Universe
Humlebaek, Denmark
Through August 29, 2004
This is a show illustrating Utzon's working method—his process—focusing both on the work and its sources of inspiration. At Louisiana. Call 45/4919-0719 or visit www.louisiana.dk for more information.

SouthwestNET: PHX/LA
Scottsdale, Ariz.
Through September 5, 2004
An exhibition of recent works by six emerging artists from Phoenix and Los Angeles. Although separated geographically, these artists explore similar issues related to the Southwest's unique version of urbanism, from its ubiquitous Postmodern architecture to the impact of suburban sprawl on the desert environment. At the Scottsdale Museum of Contemporary Art (SMoCA). Call 480/994-2787 or visit www.smoca.org for information.

Samuel Mockbee and the Rural Studio: Community Architecture
Washington, D.C.
Through September 6, 2004
Both a practical program for educating future architects and a vital force for improving living conditions in one of the nation's poorest regions, Auburn University's Rural Studio began with the drive and vision of Samuel Mockbee (1944–2001), who was posthumously awarded the 2004 AIA Gold Medal. The exhibition includes both models and photographs of the projects, as well as a number of Mockbee's paintings and sketchbooks from the Rural Studio. At the National Building Museum. Call



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202/272-2448 or visit www.nbm.org for further information.

Solos: Future Shack
Washington, D.C.
Through October 10, 2004
Architecture for Humanity's Future Shack is a shelter that can be constructed anywhere, very quickly, to address the needs of refugees as well as of victims of natural disasters. Designed by Australian architect Sean Godsell, the prototype will be built in the Cooper Hewitt's Arthur Ross Terrace and Garden as part of the summer Solos series. At the Cooper-Hewitt, National Design Museum. For further information, call 212/849-8400 or visit www.cooperhewitt.org.

Unbuilt Chicago
Chicago
Through January 16, 2005
Featuring approximately 90 drawings, plans, and models for architectural projects in Chicago that were never built, the exhibition provides a cross section of projects from the 1880s tothe present. Many notable architects are represented, including Dankmar Adler, Daniel Burnham, Alfonso Iannelli, Ludwig Mies van der Rohe, Louis Sullivan, Harry Weese, and Helmut Jahn. At the Art Institute of Chicago.For more information, call 312/443-3600 orvisit www.artic.edu.

a_show: Austrian Architecture in the 20th and 21st Centuries
Vienna
Through 2005
Due to the expansive nature of its contents, a_show is subdivided into three sections and presented in three stages. It provides a ramble through historic and contemporary Austrian architecture and explores the most essential factors in establishing a cultural identity. At Architekturzentrum Wien. For more information, call 431/522-3115 or visit www.azw.at.

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The A.R.E. (Architects Registration Exam) Workstation project was inspired by the recent move on NCARB's part to come up with the ARE Version 3.0. In the AIA AZ Gallery. For further information, call 602/275-6830 or visit www.durrant.com.

Aerospace Design: The Art of Engineering from NASA's Aeronautical Research
Washington, D.C.
Through December 5, 2004
The exhibition features more than 65 artifacts from NASA's collection, including wind tunnel models and designs for conceptual airplanes. At the Octagon. Call 202/638-3221 or visit www.theoctagon.org.

Lectures, Conferences, Symposia

Forum Barcelona 2004
Barcelona
May 9–September 26, 2004
Forum Barcelona is an innovative and creative platform through which to explore and analyze the major cultural and social challenges facing the world of the 21st century. It is a festive journey designed to bring three main themes to life: cultural diversity, sustainable development, and conditions for peace. For 141 days, it is a place where visitors can experience cultures and entertainment from around the world. Performances, lectures, exhibitions, workshops, games, and marketplaces make up this major event. The various activities and events take place all over the city of Barcelona. For more information visit www.barcelona2004.org.

Life, Liberty, and the Pursuit of Landscape Architecture
Washington, D.C.
June 1, 2004
In a free society, security concerns and other challenges can compromise our ability to live in safe environments. Leonard Hopper, FASLA, past president of the American Society of Landscape Architects and chief landscape architect for the New York City Housing Authority, will address how landscape architects help shape the world and improve the quality of our lives. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.



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To be rewarded with a $30 (instead of $20) Rebate Certificate towards the minimum $500 purchase of any Artemide luminaires, name at least three of the Artemide luminaire models appearing in the illustration (not hidden), in addition to locating the hidden Tolomeo.
To provide your answer(s), along with your name and address go to: www.whereistolomeo.com
You may provide your answer(s) only once and you must do it before July 31, 2004.
By e-mailing the correct answer(s) you will receive the $20 or $30 Rebate Certificate, via first class mail, within two weeks.

The Rebate Certificate is redeemable toward purchases as stated, at anytime during the year 2004, from any of the Artemide Showrooms listed on the back of the certificate, either in person or by mail.
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Dates & Events

International Greening Rooftops for Sustainable Communities Conference, Awards, and Trade Show
Portland, Ore.
June 2–4, 2004
Experts in diverse fields from around the globe will network and share knowledge about the benefits of green roofs, new research findings, policy developments, and the latest in green-roof products and services. Topics covered in panel discussions will include LEED, plant performance, policy initiatives, smart growth, biodiversity and agriculture, storm-water issues, and design. At the Hilton Hotel. For further information, call 416/686-5887 or visit www.greenroofs.ca/grhhc/conference.htm.

The 2004 Bruce Goff Centennial Celebration
Bartlesville, Okla.
June 5–8, 2004
The 100th anniversary of the birth of Bruce Goff and the 137th of Frank Lloyd Wright will be celebrated by viewing buildings of both Goff's and Wright's design, films of Goff, architectural and other drawings of Goff's, and exhibitions of work by those who learned from him. For further information, call 404/237-8031.

Security Workshop
Franklin Park, Ill.
June 7–10, 2004
YSG Door Security Consultants, an architectural hardware and security solutions company, is offering a Security Workshop to provide participants a better understanding mechanical security and electrified hardware to develop a fully integrated locking security system. At the YSG Satellite Training Center. Call 800/438-1951 or visit www.ysgsecurity.com.

Wolf D. Prix
Washington, D.C.
June 8, 2004
Coop Himmel(b)lau creates deconstructivist architecture that provocatively breaks away from traditional structures to expose inherent aesthetic and technological tensions. Wolf D. Prix, coprincipal of the Vienna, Austria–based studio, will discuss the firm's award-winning work, including the UFA-Cinema Center in Dresden, Germany; Vienna's SEG Apartment Tower; the Musée de Confluences in Lyon, France; and the Art Museum in Ohio, their first major U.S. commission. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for more information.

Inspire Customer Loyalty: What Clients Have to Say
Chicago
June 9, 2004
A one-day seminar being held prior to the start of the AIA Annual Convention. Marcy Steinberg, researcher and author of *The Inside Scoop: Proposals and Interviews from the Client's Perspective*, will provide insight into what triggers customer loyalty and outline research data from both a national and regional perspective. At the Metropolitan Club in the Sears Tower. Visit www.smps.org.

The AIA 2004 National Convention and Design Exposition
Chicago
June 10–12, 2004
The premier design and construction industry event with firsthand industry updates and cutting-edge products and services that will shape the future of architecture. At McCormick Place. For further information, call 800/242-3837 or visit www.aia.org.

40th IMCL Conference: Building Cities for Community & Identity
London
June 13–17, 2004
Topics will include traditional town planning and civic values, the built environment and the healthy city, and celebrating the European square. At the University of Notre Dame London Centre. Visit www.livablecities.org for more information.

The First Northeastern Regional Scrap Tire Conference
Albany, N.Y.
June 15–16, 2004
The goals of the conference are to improve the efficiency of the scrap-tire industry and to promote regional cooperation on scrap-tire programs. Topics to be discussed include:

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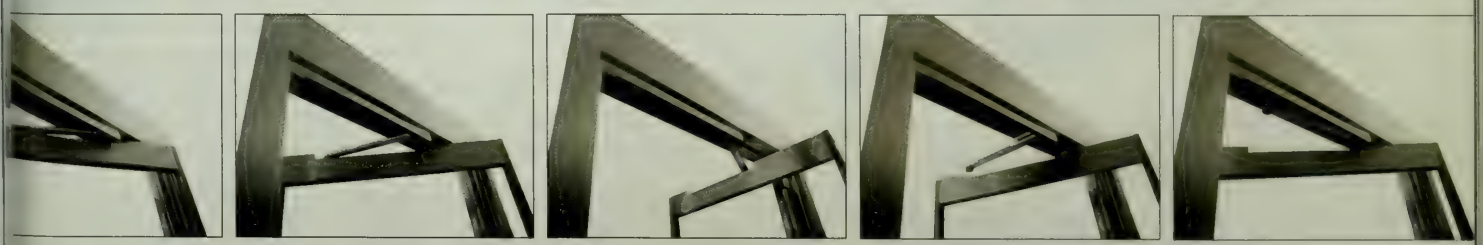
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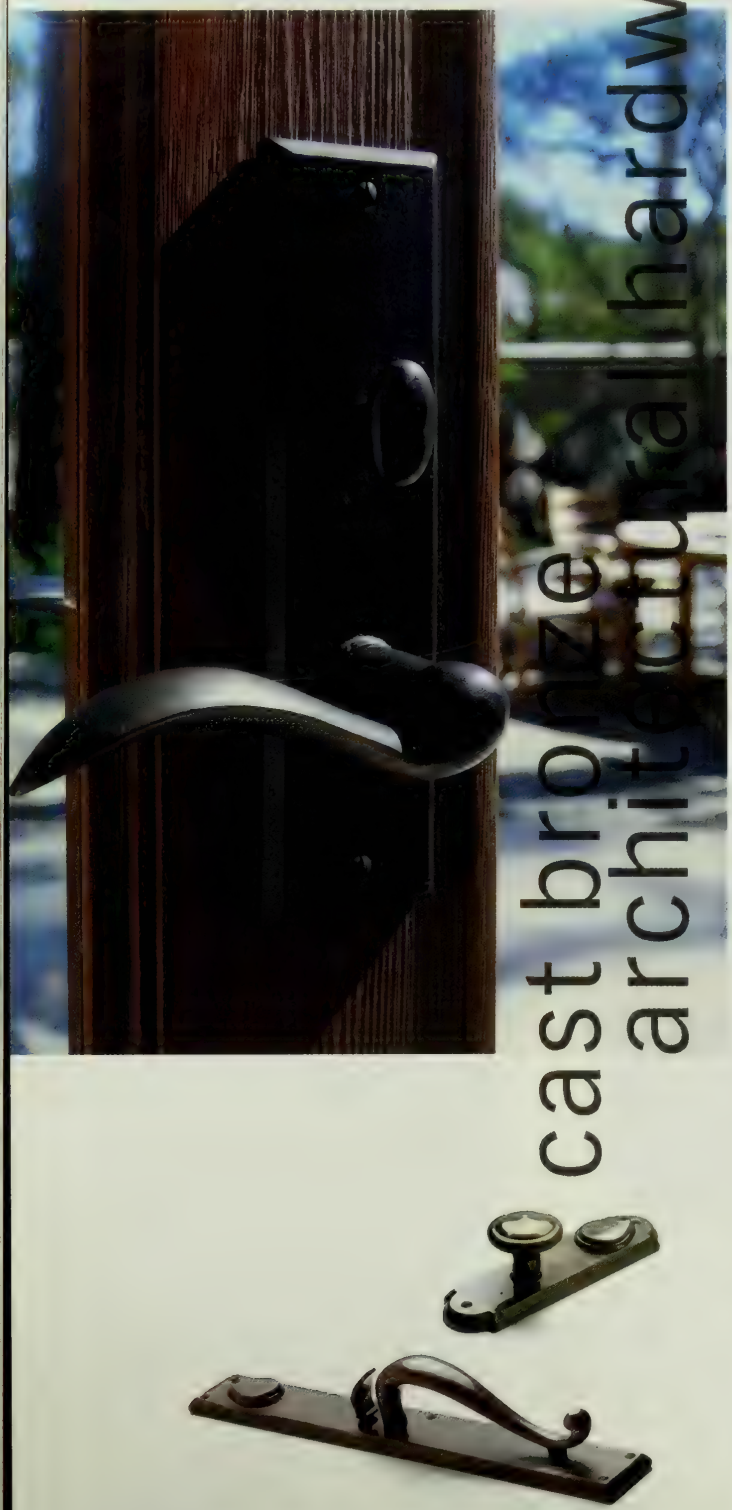
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Dates & Events

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Antoine Predock
Washington, D.C.
June 16, 2004
To celebrate the opening of *Liquid Stone: New Architecture in Concrete*, architect Antoine Predock will discuss his work, which responds in many ways to both the natural and the cultural landscapes. Practicing in Albuquerque, New Mexico, for more than 30 years, Predock is an internationally acclaimed architect who draws from the elemental forces of a site, as well as its history and myth, to create an "architecture of ritual." Predock's Shadow House in Santa Fe, New Mexico, is featured in the exhibition. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org..

The Mediterranean Medina
Pescara, Italy
June 17–19, 2004
An International seminar aiming at the study of the particular physical characters and the main transformations of the Mediterranean City. The city has built up its identity through the reuse and modification of the previous urban remains. At the Faculty of Architecture of Pescara. Visit www.unich.it/idea.

Building Green
Washington, D.C.
June 21, 2004
To celebrate the summer solstice, Helen English, executive director of the Sustainable Buildings Industry Council, will discuss ways to help home builders, architects, home owners, and others better locate general information about such topics as community and site planning, energy, energy-efficiency, the building envelope, water use, indoor environmental quality and green materials. This lecture draws on material from *Green Building Guidelines: Meeting the Demand for Low-Energy, Resource-Efficient Homes*, which was developed by homebuilders for homebuilders. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Their Last Battle: The Fight for the National World War II Memorial
Washington, D.C.
June 30, 2004
A casual conversation between a Congresswoman and one of her constituents in 1987 grew into an epic struggle to build the National World War II Memorial—an effort that lasted more than four times as long as it took America to fight the war itself. Nicolaus Mills, Sarah Lawrence College, will recount the struggle and chronicle the development of the Washington Mall, from its origins as swampland to Maya Lin's controversial Vietnam Veterans' Memorial. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

2004 SMPS/PSMA National Conference
New York City
August 11–14, 2004
This conference is the leading forum for business development, marketing, and firm management for the A/E/C industry. This year's conference focuses on helping firms build business in tough economic times. At the New York Marriott Marquis. Visit www.build-



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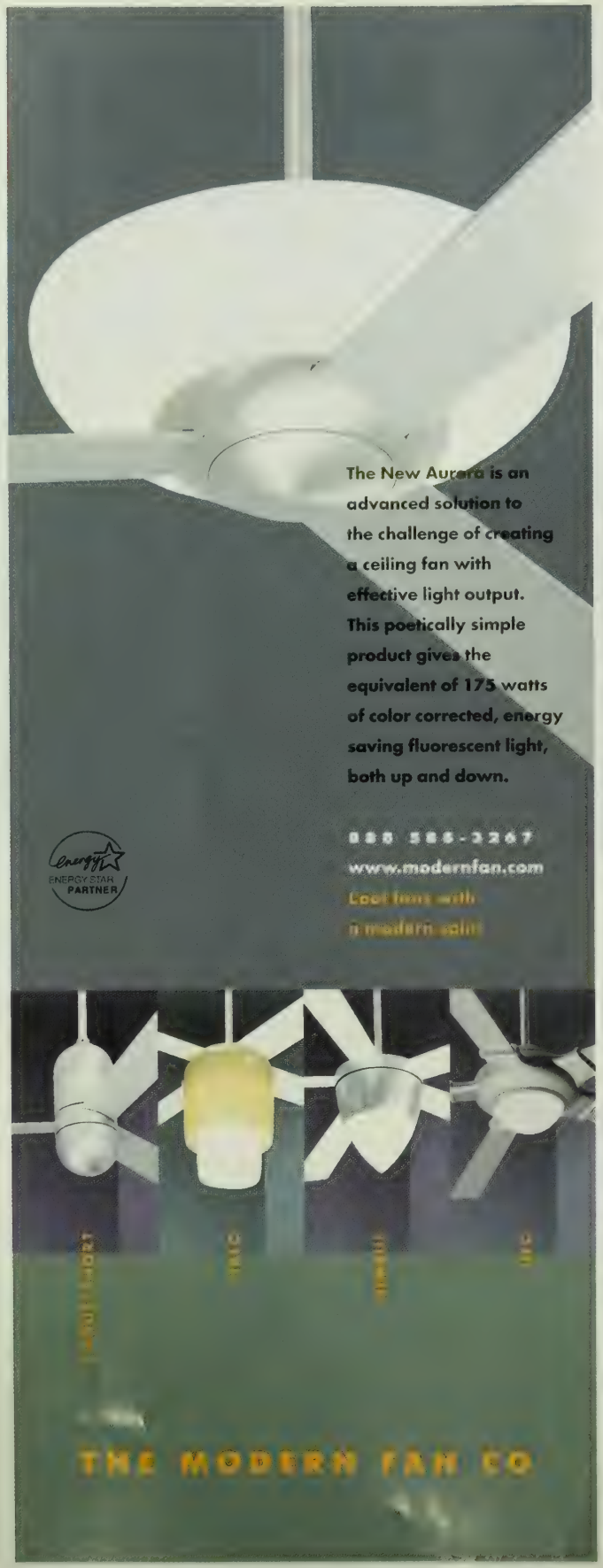
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Dates & Events

business.org for more information.

Houston Mod: Leo Marmol
Houston
August 19, 2004
Leo Marmol, AIA, managing principal of Marmol Radziner + Associates of Los Angeles, will be the second annual speaker of the Houston Mod August lecture. He will give a talk about the preservation of Modern architecture. His firm is responsible for the restoration of Richard Neutra's Kaufmann House in Palm Springs and has been recognized in many national publications. At the MFAH Brown Auditorium. Visit www.marmol-radziner.com or www.houstonmod.org.

ARMA 2004 Summer Meeting
Kansas City, Mo.
August 24–26, 2004
The Asphalt Roofing Manufacturers Association (ARMA) is the North American trade association representing the manufacturers and suppliers of bituminous-based residential and commercial fiberglass and organic asphalt shingle roofing products, roll roofing, built-up roofing systems, and modified bitumen roofing systems. At the Fairmont Hotel. Call 202/207-0917 or visit www.asphaltroofing.org.

Introduction to the 2003 International Building Code for Design Professionals
Las Vegas, Nev.
September 27–28, 2004
The University of Wisconsin, Madison, Department of Engineering Professional Development offers this course, which will provide a broad overview of the key nonstructural components of the International Buiolding Code, focusing primarily on those requirements that deal with fire and life-safety concerns. At the University of Wisconsin. Contact Jeffrey A Lackney at 608/262-0638 or visit epdweb.lengr.wisc.edu/ webG022.

NeoCon East
Baltimore, Md.
October 6–7, 2004
This year's NeoCon East promises to attract thousands of attendees representing regional architecture, design and facilities management communities, as well as federal government designers, buyers, and specifiers. New to NeoCon East 2004 is a lighting pavilion and the Architectural Stone and Ceramic Tile Exposition. For information, visit www.merchandisemart.com or call 800/677-6278.

Urban Waterfronts 22: Gathering by the Water
Milwaukee, Wis.
October 14–16, 2004
The annual international conference on waterfront planning, development, and culture will convene 300 people from around the globe from all the varying disciplines involved in this dynamic field. More than 30 speakers will cover a wide range of issues. Visit www.waterfrontcenter.org for more information.

ISH North America
Boston
October 14–16, 2004
The only consolidated trade show incorporating products and services in Kitchen and Bath, Plumbing, PVF, Heating and Air-Conditioning in an expansive hall of over 250,000 square feet of exhibition space. At the Boston Convention and Exhibition Center. Visit www.ish-na.com.

Competitions

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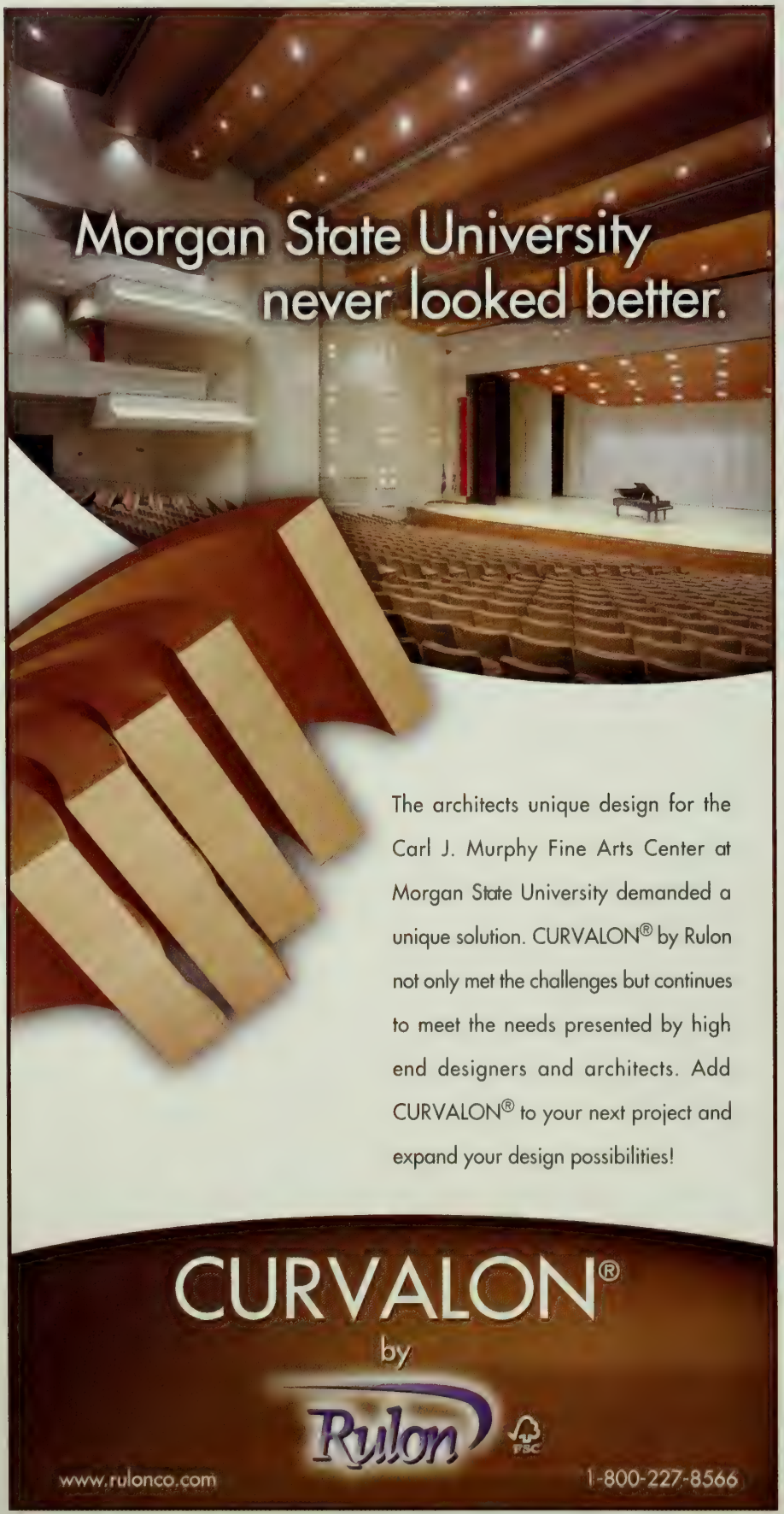
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Dates & Events

Awards Program
Deadline: July 15, 2004
The Waterfront Center's announces its 18th annual international awards program for projects, plans, and grassroot's citizen efforts. Visit www.waterfrontcenter.org for more information.

Central Glass International Architectural Design Competition 2004: AsiaFront Village
Deadline: July 26
The AsiaFront Village ought to be a place of further promotion of the unique culture interspersed throughout Asia and the enjoyment of its results. It can be located anwhere in the world, in the city or in the suburbs. It can be consolidated into one facility, or it can be an international conference facility or training center, a lodging facility or complex. For information and submission requirements, visit www.japan-architect.co.jp.

2004 Texture Design Contest Chandler, Ariz.
Deadline: July 30, 2004
Meltdown Glass Art & Design is inviting creative professionals interested in decorative glass to compete in their Texture Design Contest. For further information, call 800/845-6221 or visit www.meltdownglass.com.

Norwalk Housing Design Competition Norwalk, Conn.
Deadline: August 13, 2004
In response to the need for below-market-rate housing in the city of Norwalk, the Housing Authority of Norwalk is sponsoring a housing design competition for exemplary site and unit plans for first-time home buyers, entry- and mid-level professionals, and fixed-income seniors. Call 203/857-0200 or visit www.swinter.com/NorwalkHousingDesignCompetition.html for information and submission guidelines.

The 2004 Ecohouse Design Awards
Deadline: August 31, 2004
The competition is open to any student, or group of students, in a school of architecture. The challenge is to design an Ecohouse able to survive without relying on a great deal of fossil fuel. Visit www.architecturalpress.com/companions/ecohouse.

Ambience Design Competition
Deadline: October 31, 2004
Sea Gull Lighting Products, Inc. Ambience Design Competition is designed to honor the innovative, fashion-driven, and trend-setting applications of Ambience low-voltage lighting systems developed by industry trades people, including lighting consultants, designers, contractors, architects, and sales personnel. Visit www.seagulllighting.com for more information.

Green Tent Design Competition Los Angeles
Deadline: August 11, 2004
Online preregistration required by July 30, 2004, at www.greententcompetition.com
Ecoshack announces a competition to design an environmentally sustainable camping shelter—a green tent—for use in the Mojave Desert in and around Joshua Tree National Park. The competition is open to anyone with innovative design ideas inspired by Southern California's green lifestyle; architects, interior designers, product and furniture designers, graphic designers, artists, design students, and campers. Collaborative and multidisciplinary design teams are encouraged. Jurors for the competition include designer David Erdman of servo, SKDP graphic designer Stephen Kinder, Ecoshack founder Stephanie Smith, and the artist Andrea Zittel. Winners will be notified on August 25, 2004. Winning entries will receive cash prizes and will be prototyped on Ecoshack's 5-acre demonstration site in Joshua Tree, Calif. All entries will be exhibited in Joshua Tree during the High Desert Test Sites event October 23–24, 2004. For additional information visit www.greententcompetition.com

C2C Home Design and Construction Competition
Early Registration: July 15, 2004
Deadline: December 15, 2004
Design will lead to actual construction. Judges will include William McDonough and Randall Stout. Homes will be built with a goal of achieving the new standards of sustainability set up in *Cradle to Cradle: Remaking the Way We Make Things*. For information regarding submission guidelines visit www.c2c-home.org.

Shinkenchiku Residential Design: House

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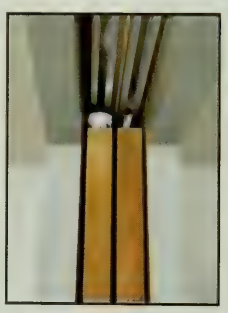


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Dates & Events

of Multiple Dimensions Competition
Deadline: September 3, 2004
Judged by Steven Holl, this competition is looking for the design of a small house of 250 square meters which can act as an experimental probe into an architecture of more than four dimensions. The experiential phenomena of the house will be a crucial factor. The house should also be inhabitable. Materials, from molecular aspects to geometric properties, will be important, as will space and time. The house will act like a "thought experiment." For more information about submitting, visit www.japan-architect.co.jp.

Emerging Professionals Guest House/Studio Design Competition
Registration Deadline: October 1, 2004
Submission Deadline: October 18, 2004
This competition is a special project intended to encourage and recognize the design skills of emerging architectural professionals. The award-winning projects will receive recognition and cash awards. Finalists will become part of a case study demonstrating cooperative projects between industry, schools, and professional practice. This competition is a partnership between EPIConnection.com, the AIA National Housing Committee, and the sponsor, the Whirlpool Corporation. For information and submission requirements, visit www.epiconnection.org.

Zhu Jia Jiao Competition
Registration Deadline: May 30–August 30, 2004
Submission Deadline: September 30, 2004
International Open Competition for new Jiangnan Canal Town. Organized by the City of Shanghai Qingpu District Government, this competition hopes to inspire a new manner of urbanization, one that is neither ubanism nor suburbanism; it intends to provoke a lasting dialogue between Chisese city and contemporar;y architecture. For more information and submission requirments, visit www.shzjj.com

E-mail events and competitions information two months in advance of event or competition submission deadline to ingrid_whitehead@mcgraw-hill.com.

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lectures


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June 8
Wolf D. Prix
co-principal of Coop Himmelb(l)au, Vienna, Austria

June 16
Antoine Predock
principal of Antoine Predock Architect, Albuquerque, New Mexico

June 17
Takashi Yamaguchi
principal of Takashi Yamaguchi and Associates, Osaka, Japan

June 21
Building Green
Helen English, executive director of the Sustainable Buildings Industry Council

exhibitions


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Envisioning Architecture: Drawings from The Museum of Modern Art, New York
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Seattle University's Chapel of St. Ignatius
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Associate Architect: Olson Sundberg Architects, Seattle, Washington
Landscape Architect: Berger Partnership
Contractor: Baugh Construction; Concrete Producer: Padman Concrete
Interior Floor: Emil's Concrete Construction

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FOR THE EMERGING ARCHITECT

This month in archrecord2 we look at the winners of the American Institute of Architect's 2004 Young Architects Award and examine a project in L.A.'s Skid Row that is high on design and low in cost. In Design, get to know the architects, their leadership in design, and their service to the profession. In Work, architect Chantal Aquin builds a project with modest financing but bold inventiveness. Learn more by visiting architecturalrecord.com/archrecord2.

DESIGN

A great start in architectural careers

This year, the American Institute of Architects awarded five architects the 2004 Young Architects Award. Recipients of this award, regardless of age, are at an early stage of their careers, and their exceptional leadership in design, education, and/or service to the profession are all taken into consideration when they are chosen. The five individuals honored this year each display characteristics that show a promising future in architecture. The winners will be presented with their awards at the AIA 2004 National Convention and Design Exposition in Chicago this month.

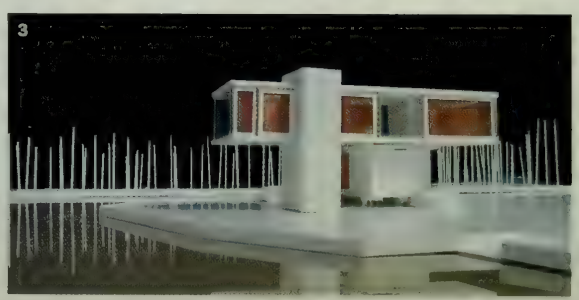
Licensed to practice architecture in the states of Virginia and Maryland, architect David Jameson, AIA, has made a reputation for himself as a remarkable and imaginative residential architect. With the formation of David Jameson Architect six years ago, the Virginia Tech graduate has had the opportunity to design projects at both small and large scales. His ability to juxtapose texture, shapes, materials, and colors have become his trademark. With conservative Washington, D.C., as the backdrop for many of his projects, he has been able to successfully create modern homes in a traditional setting. The architect's work has garnered attention from regional and national magazines and has been featured on several programs on Home & Garden Television. His designs have also been recognized by more than 35 local, state, and national awards.

The methodology of Janis LaDouceur, AIA, has brought her and her Minneapolis-based firm, Barbour/LaDouceur Design Group, much acclaim. LaDouceur believes that the art of architecture is to tell a story, and she approaches each project with this philosophy. Many of her community-based projects—cultural centers, memorials, and museums— reveal her desire to incorporate her clients' culture into the design. Attention to such detail can be seen in LaDouceur's design of projects like the proposed Ojibwe Cultural Center and the Richard I. Bong World War II Heritage Center in Superior, Wisconsin. Another project, the Science House at the Science Museum of Minnesota [RECORD, August 2003, page 170], is an addition whose form was



David Jameson Architect
Examples of David Jameson's award-winning residential designs: (1) Church Street Residence, Washington, D.C.; (2) Push Pull House, Chevy Chase, Md.; (3) Model of Maison Bois Chamois, Suwannee, Fla.





intended to recall the nearby river tugboats. As one of the first outdoor science installations in the nation, the building, which will serve as a greenhouse, a laboratory, and classroom space, will also be an exhibit in itself, as it produces more energy through solar strategies than it uses.

Architect Kevin Sneed, AIA, is a respected figure in the AIA Northern Virginia (NOVA) chapter, and his service and contributions to the chapter have become invaluable. The architect has taken part in numerous NOVA committees and also served on the board in several positions: treasurer, president, and the 2003 president. As a founding member of the NOVA Young Architects Committee, he developed programs that are now used as models for other AIA chapters. Currently the director of architecture at OTJ Architects in Washington, D.C., Sneed's leadership has created bonds with related industries and with surrounding AIA chapters in Virginia and Maryland. His enthusiasm for design can be seen in ventures such as his promotion of the profession at elementary schools and his aid in the organization of Virginia Architecture Week. When Sneed worked with BBGM Architects/Interiors, his client list included Chevy Chase Bank and the U.S. Marine Corps.

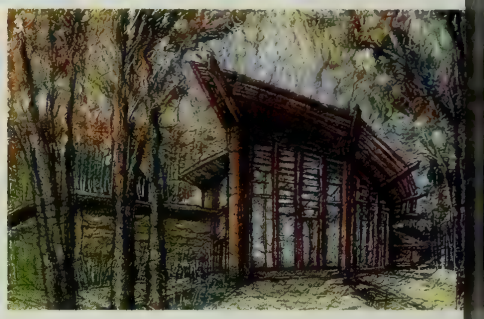
Donna Kacmar, AIA, is balancing a career that involves design, teaching, and community service. As founder of architect works in Houston, Texas, she has designed residential and commercial projects that have been widely published and received numerous awards. Kacmar is assistant professor at the Gerald D. Hines College of Architecture at the University of Houston, where she is also the Level I Graduate Design Coordinator, and for the past eight years she has taught at the university's Summer Discovery Program for high school students. She also has a long and varied history in community-based service activities. Since 1998, Kacmar has worked with the Avenue Community Development Corporation, a nonprofit, low-income-housing-development corporation for rebuilding Houston's inner-city neighborhoods.

After graduating from Syracuse University with a B.Arch. degree, John Burse, AIA, moved to St. Louis and now promotes urban renewal in his own community. A senior associate with



Barbour/LaDouceur Design Group
Projects include: (1) The Environmental Experiment Center "Science House," Minneapolis; (2) The Richard I. Bong WW II Heritage Center, Superior, Wisconsin, Ill.; (3) Battle Point Ojibwe Cultural Education Center, Leech Lake, Minn.







BBGM Architects/Interiors
Examples of Kevin Sneed's interior designs: (4) Trizec Regional Headquarters, Washington, D.C.; (5) PHH Arval/Highland Office, Baltimore County, Md.







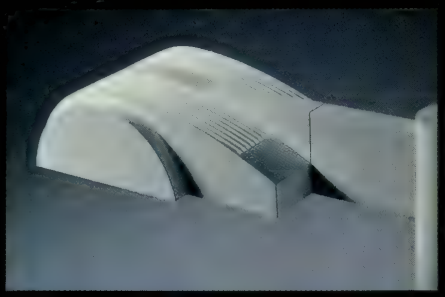
architect works
Donna Kacmar's recent design work: (6) Round Valley Texas Office Building + Garage, Belleaire, Tex.; (7) Woods High School's planned Westview Campus, Houston (with Natalye Appel and Associates).

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Mackey Mitchell Associates
John Burse combines a personal passion for revitalizing the city with urban planning: (1) Future vision for the Old North St. Louis; (2) An example of Burse's award-winning watercolors.



Mackey Mitchell, Burse's work focuses on urban design, using this skill not only to fulfill his work but also to fulfill his passion—revitalizing the Old North St. Louis community, a once-bustling neighborhood. The architect has gone beyond what one might expect in this planning project. Using his personal time to create drawings and renderings of what he foresees for this area, Burse also holds workshops and meets with residents of the neighborhood to explain his vision. His zeal for the project has been contagious, as he has prompted local leaders, developers, and lenders to support this effort to make the area a livable community once again. Burse's design and planning skills have also been essential to his work on other projects, including the Concordia Seminary, the Central Institute for the Deaf, and master plans for international resort communities. *Randi Greenberg*

For more projects and photos of these award-winning architects, go to *architecturalrecord.com/archrecord2*

PHOTOGRAPHY: © COURTESY JOHN BURSE (THIS PAGE); LUCY GONZALES (OPPOSITE)

WORK

High design hits the spot

When Los Angeles-based architect Chantal Aquin was asked to design a new service center for the Skid Row Housing Trust, she was faced not only with a low budget, consisting entirely of a HUD grant, but limited practical experience as well. Not willing to sacrifice design, Aquin turned these limitations into assets, mixing resourcefulness with ingenuity—and a lot of plain old hard work.

Jim Bonar, director of the Skid Row Housing Trust, an organization that provides permanent housing and supportive services for residents of Los Angeles's Skid Row neighborhood, wanted something different for its new Service Spot. Located on the ground floor of one of the organization's single resident-occupant hotels, Service Spot was to be a "user-friendly" center that would offer case management, support-group meetings, educational opportunities, and service referrals.

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The Service Spot provides a fully functional and well-designed service center for the residents of Skid Row.

aving just completed work on another onprofit project with Aquin, Bonar iew she would be the right person turn Service Spot into that "some-ing different" he was looking for.

"When it comes to designing for e homeless or mentally ill, there's pically a very distinct separation tween public and private spaces," plains Aquin. "There is a sense of ar there, since it's sometimes difficult anticipate their behavior—so many these centers are designed with barriers. Instead, Jim wanted users to feel a sense of ownership of these spaces. We also wanted the residents to feel as though they were given something precious, not just services contained within blank walls."

To stretch her limited budget as far as it could go, Aquin, just a couple of years out of SCI-Arc, enlisted help from current students as well as fellow alum Rocio Romero and former SCI-Arc instructor Randall Wilson.

Wilson led an intensive summer studio in which students designed and built the seating, workstations, filing trolleys, and cabinets for the refurbished storefront. Though Bonar was skeptical of their ability to furnish the space, students received material donations from Home Depot, Anderson Plywood, and Häfele and were able to outfit the entire 2,000-square-foot space.

The reception area is designed as a light box visible from the street to welcome visitors. Inside, the standard syntax of public-to-private space confronted by users of most public service agencies is twisted to create an interweaving of private with public spaces—allowing users to walk freely from one activity to another with no physical obstacles. Transparent and translucent materials allow users to see the activities in which they will ultimately participate with no fears of being engulfed by authorities or institutions. *Josephine Minutillo*

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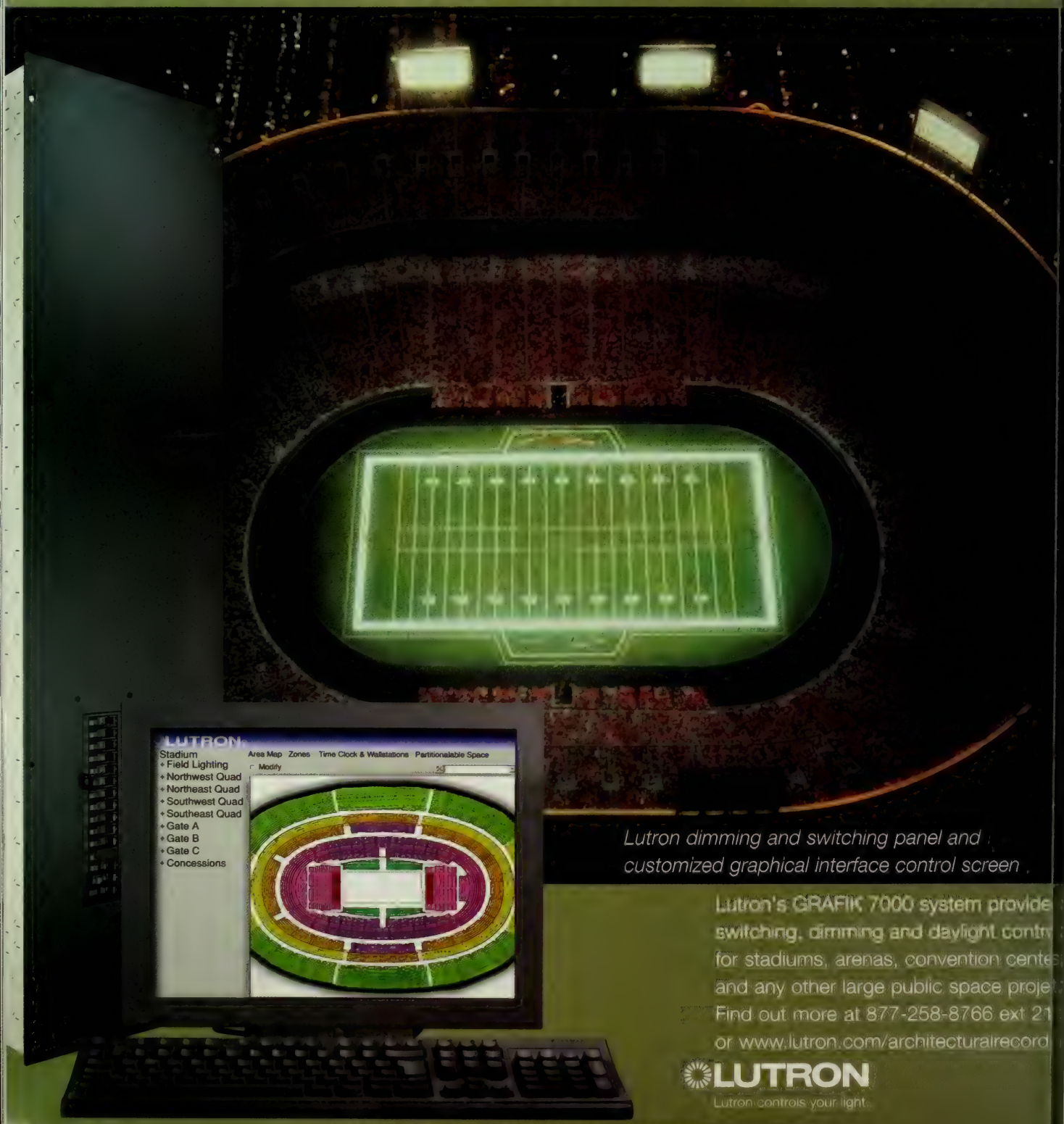
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Hang on to your old cameras: For some purposes, film is still better than digital

Practice Matters

By Charles Linn, FAIA

Today, practically everybody uses digital technology to make and store photographic images. Some recordings of a scene are made on the spot, using digital cameras; others are made indirectly by scanning existing photographs or transparencies that were made in the old-fashioned way, using film.

The advantages of photographs made with digital cameras are obvious. They can be previewed on the spot. Desktop printers can make copies that are as good as photographs for some purposes. One doesn't need to buy film or have it processed by a lab.

Digital images have other advantages: They can be e-mailed instantly and inserted into documents in seconds. Adobe's Photoshop can correct color to a certain extent and add a host of special effects. A whole archive of photos can be stored on a few CDs or a single hard drive and sorted and indexed using image-management software. Digital storage is theoretically permanent, although CDs and disks can get damaged and hard drives do crash.

The advantages of digital are so overwhelming, and the new equipment is so easy to use, that some architects have begun documenting their finished projects digitally and given up using film and professional photographers entirely. But, there are still times when conventional medium- and large-format prints or transparencies are better than images made with point-and-shoot digital cameras, particularly when large prints are needed or the photos will be viewed up close. Professional-grade, high-resolution digital cameras that accept interchangeable lenses currently cost from $1,500 to $15,000.

At least for the moment, there are some applications where film cannot be replaced by digital, such as when long exposures are needed for night scenes. And digital cameras that can correct perspective are still relatively rare. So, don't take the phone number of your trusty architectural photographer out of your Rolodex yet, and hang on to your old camera. True, some professional photographers are switching to digital for some jobs, but most are sticking to film.

"It doesn't matter if you are using a file from a digital camera or something that was scanned. It's the quality of what came out of the camera that determines the quality of the final product," says New York photographer Elliott Kaufman. "Photoshop can do amazing things, but one thing it can't do is make a mediocre image from *any* source look like an image from a four-by-five," he says, referring to the large negatives and transparencies still favored by many. (See the last page of this article for an illustration of three different film formats.) Kaufman still shoots exclusively with film. So when should an architect choose film over digital? It helps to get an understanding of why the two are so different.

Digital or film?

Digital and film cameras record patterns of light in entirely different







Which do you want in your portfolio? Pixels are starting to show in the enlargement of the digital picture. The 35mm shot is grainy and less sharp. The detail of the medium-format photo is clearly the best of the three.

ways. When the chip inside a digital camera is momentarily exposed to a burst of light, millions of bits of information are gathered and recorded as a grid of minute colored squares called pixels. Although some digital cameras allow the user to preview such an image, it doesn't really exist in physical form until it is printed out. The more information captured by the chip, measured in megapixels, the better the image will be.

The film in a camera is analogous to the chip. When light is focused on it, microscopic crystals of silver halide embedded in the film are altered in such a way that a representation of the image is left on it. This becomes fixed during development. The type of film selected by a photographer certainly affects the sharpness of a photograph, as does the physical size of the film. The larger the film, the more "information" can be captured in a single exposure. And, obviously, large negatives do not have to be enlarged as much as small negatives to get a usable picture. Whether one is talking about digital or film, the quality of the camera's lens and the stability of the camera during an exposure also influence the sharpness of the images they make.

ART DIRECTORS AND THOSE WHO MANAGE AWARDS PROGRAMS STILL RECOMMEND PHOTOS MADE THE OLD-FASHIONED WAY.

Some photographers believe that because people don't naturally see the world rendered in pixels, film will always capture an image in a more realistic manner than a digital camera. When enlarged, the colored squares that make up a digital photograph can be seen, just as the grainy appearance of the halide crystals on the film become visible. New York photographer David Sundberg, who often uses a digital camera says, "With digital there is somehow a different overall look or feel to the image. There is often what I would describe as a colder, harder quality to the photograph."

As a point of comparison, some say five-megapixel cameras, which currently cost about $500 and up, can produce images with a resolution that closely approximates one made by a professional-quality 35mm camera. That is, they can both make acceptable 8-by-10-inch prints. But when the images are enlarged much beyond this point, or especially if they must be cropped and magnified even more, either grain or pixels will become noticeable. Does it really matter? That depends on what the image will be used for.

Books and magazines

People supplying images for publication in magazines or books should still expect to supply either large format transparencies, or prints made from large-format negatives, says Douglas Curran, associate editor at Rizzoli International Publications: "I encourage all of our authors and photographers to supply us with transparencies or flat art, rather than digital art, whenever possible. Consistently, the final printed image, when made from a transparency, is stronger, more vibrant and accurate in terms of representing the original than a printed image as made from digital art. I am told that this will change, but to date, I have not seen any evidence that this change is near."

Many art directors prefer to work with original transparencies so that they can see and match the final color to the original color proof supplied by their printers.

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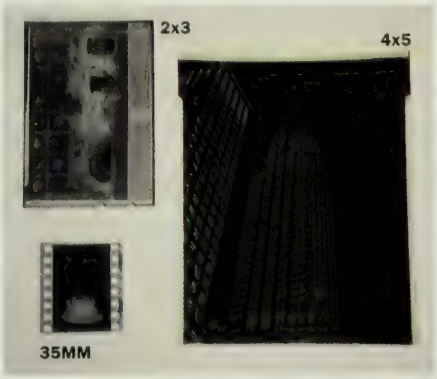




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Most photographers agree that even the best digital cameras can't match the sharpness of the 4-by-5-inch negative.

Several art directors say that in recent years they have been plagued by contributors who submit digital photography that is unusable because images were scanned at the wrong resolution or supplied on damaged CDs. These problems can be avoided when film originals are submitted instead of digital files.

Another situation where film seems to have an edge over digital is in awards-program submittals. National AIA Awards director Robin Lee says that recently she's seen many promising award entries fail because their binders relied on poor quality digital printouts instead of large color prints or slides. She says, "Jurors have been simply appalled at the low quality of some of the submissions that have relied on digital prints." Lee still recommends slides for their brilliant color, sharpness, and because they are easy for groups to view. "Slides are an important form of presentation that juries consistently appreciate."

What about PowerPoint?

Almost any mention of slides will bring up one application where digital photography has been quite successful in superceding film, and that is when they are used with presentation software like Microsoft's PowerPoint and Apple's new Keynote. Either digital images, or for that matter digitized slides, can be dropped into presentations in seconds.

ART DIRECTORS STILL PREFER ORIGINAL FILM BECAUSE ITS COLOR CAN BE CHECKED AGAINST COLOR PROOFS.

The clarity of the image is probably not as important as it is for other applications, because the amount of resolution that digital projectors are currently able to achieve is quite modest. But the images are usually viewed at a distance, so sharpness doesn't matter as much. Still, if you are doing a presentation where accurate color and sharpness are crucial, go with a slide.

More changes to come

There is no doubt that high-megapixel digital cameras are going to keep getting cheaper and better. One day a column in this magazine may report that in terms of color and sharpness, they truly *have* superceded medium- or large-format film, but it will be awhile before this kind of equipment is affordable. Until then, architects should carefully consider whether digital photography is sufficient for all of their purposes, or whether they'd be better off shooting a few slides of each project with their old camera or, for the big jobs, hire a photographer. Film isn't obsolete yet. ■

RECORD editor Jane F. Kolleeny contributed to this article.

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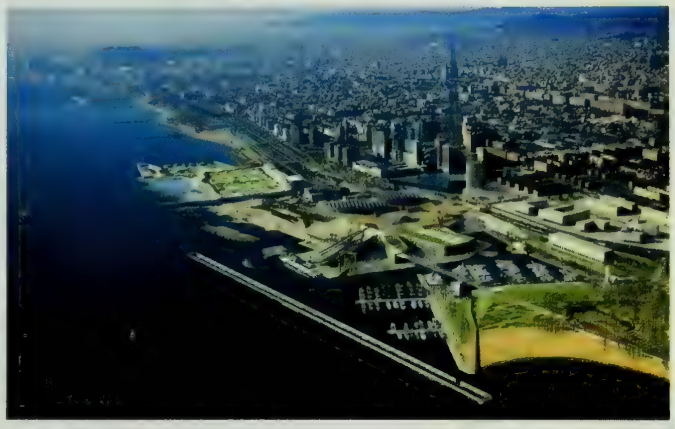
A new event, the Universal Forum of Cultures, helps Barcelona transform an ailing district

Correspondent's File

By David Cohn

The latest recipe for Barcelona urban design, as seen at the site of this summer's Universal Forum of Cultures, a UNESCO-backed international festival, goes something like this: Take the last stretch of unrecovered seafront on the northeastern limits of the city—a zone blighted with a sewage treatment plant, a power plant, a garbage incinerator, and decades of pollution—clean it up, and upgrade the dirty infrastructures with state-of-the-art, environmentally friendly facilities. Span the now-odorless sewage plant with a 27-acre public Esplanade that connects the city to new waterfront recreational facilities, and crown it with a monumental photovoltaic pergola to underscore the environmental theme. Stir in a landmark auditorium and exhibition hall designed by Jacques Herzog and Pierre de Meuron, hotels, and a convention center, and set the whole thing to boil with the Forum, invented specifically for the occasion, with debates, exhibitions, performances, and hundreds of other events that attract millions of visitors to the site from May through September. The result? Voilà! A major eyesore and environmental disaster area has been transformed into a new motor of future urban development, and a model for the principles of sustainable design that the Forum advocates.

David Cohn is RECORD*'s Madrid-based international correspondent.*



Opening in May and running until September 26, the Forum differs from traditional World's Fairs by offering a meeting of cultures rather than nations, explains Mayor Joan Clos. It proposes a platform of debate in which the problems of environmentally sound economic growth, cultural understanding, and world conflict are treated as interdependent issues, a debate shaped by Barcelona's particular perspective as a center of regional cultural identity and economic power within the mosaic of European city regions. Organizers expect five million visitors.

The urban operation of the Forum occupies three landfills reclaimed from the sea: a marine wetlands artificially created for a marine branch of the Barcelona Zoo, still on the drawing boards; the central platform of the Esplanade; and to the northeast, a coastal park with a new beach, designed by Madrid architects Iñaki Ábalos and Juan Herreros, which features artificial hills that buffer the impact of the power plant, incinerator, and a new garbage sorting and recycling facility.

The major buildings of the Forum are confined to the landward side of the operation. Here, the city has built a convention center, hotel, and office building designed by local





The plan for the Cultural Forum (above) includes redeveloping a formerly abandoned stretch with an esplanade, convention center, auditorium, exhibition hall, and more. The exhibition hall (left), called the Forum Building, by Herzog & de Meuron, features a massive horizontal slab in the form of an equilateral triangle measuring nearly 600 feet to a side.

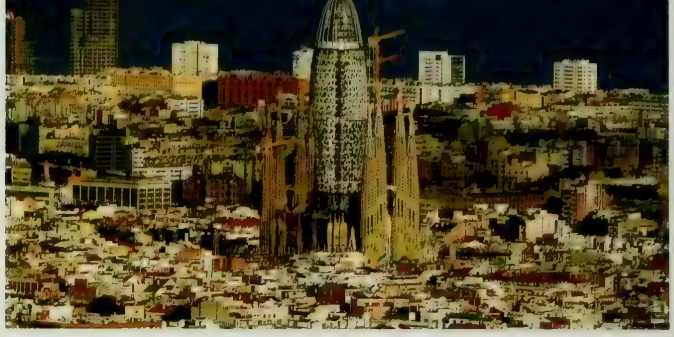
architect Josep Lluís Mateo, which features a 120,000-square-foot exhibition hall, and the Forum Building, which boasts a 3,200-seat auditorium and 50,000 square feet of exhibition space.

In architectural terms, the Forum is conceived as a territory of activities rather than a conventional urban development. Mateo, who participated in the early sessions of urban design, together with Barcelona chief planner Josep Anton Acebillo, and architects Enric Miralles and Eduardo Bru, among others, describes the early concept for the project as a "magmatic territory that spills across the site."

This idea of a lavalike extrusion is present in the irregular form of the Esplanade, designed by architects Elías Torres and J.A. Martínez-Lapeña, which seems to spread out from the Diagonal (a major cultural thoroughfare) arching over the coastal highway and the sewage treatment plant to end at the sea in a series of escarpments up to 60 feet high. With its surface finished in a patchwork of multicolored asphalt and lawns crisscrossed with expansion joints, the Esplanade establishes the artificial ground plane or geography on which the events of the Forum take place. It will also contain outdoor restaurants and cafés and host future activities such as flea markets, fairs, and public festivals.

To the southeast, an area of artificial dunes and amphitheaters designed by the London-based Alejandro Zaera brings the platform down to the water, where Barcelona architect Beth Galí has designed a paved bathing area, like a swimming pool open to the sea. While crowning the Esplanade on a high point jutting into the Mediterranean is the expressive form of the photovoltaic pergola, the size of a football field, also designed by Torres and Martínez-Lapeña, which produces 1.3 megawatts of electricity, roughly the consumption of 1,000 Spanish homes. As seen from the water, the Esplanade and pergola, which reaches a height of 200 feet, take on the proportions of an artificial geographic event that marks the northeastern limits of the city, mirroring at a smaller scale the mount of Montjuic that frames Barcelona to the southwest. The Esplanade also marks a departure from the usually staid and conservative Modernism of Barcelona architecture, as seen, for example, in the 1992 Olympic Village [see RECORD, August 1992, page 100], and an opening toward a more earthy, ludic, and dynamic use of form, closer in spirit to Antonio Gaudí and the Catalan artist Joan Miró.

Herzog & de Meuron's Forum Building is the architectural star of the show, a massive horizontal slab in the form of an equilateral triangle measuring nearly 600 feet to a side. Due to its size, the architects have conceived the design not in the traditional terms of composing facades or volumes, but rather as if the building formed part of the Forum's peculiar artificial landscape. The upper mass containing the hall seems to float over the Esplanade to create an unusual shaded plaza, with spectacular cantilevers on all three sides. Its supports and ground-floor enclosures are hidden behind mirrored glass that dissolves in the reflected light of the surrounding plaza. The brilliant contrasts of reflected light and shadow are enhanced by the dark metal ceiling tiles, conceived as a watery surface covered with bubbles, which draw dappled light deep into the space. The auditorium is also partly finished in these liquid tiles; it spills down from the upper mass through one of the plaza's glass volumes to end below grade. A plane of water literally covers the roof, and water trickles down to the plaza through crevices opened in the volume, while the jagged mirrored windows resemble rivulets of spilling water. The rough, sprayed cement facades, painted Yves Klein blue, have disappointed some for their apparent cheapness, but the detailing is actually very fine, and the volume reads like a bright, sophisticated cartoon.





Jean Nouvel's Agbar Tower is rising near the Forum site in Barcelona. At 474 feet, it is another example of the city's aggressive urbanism.

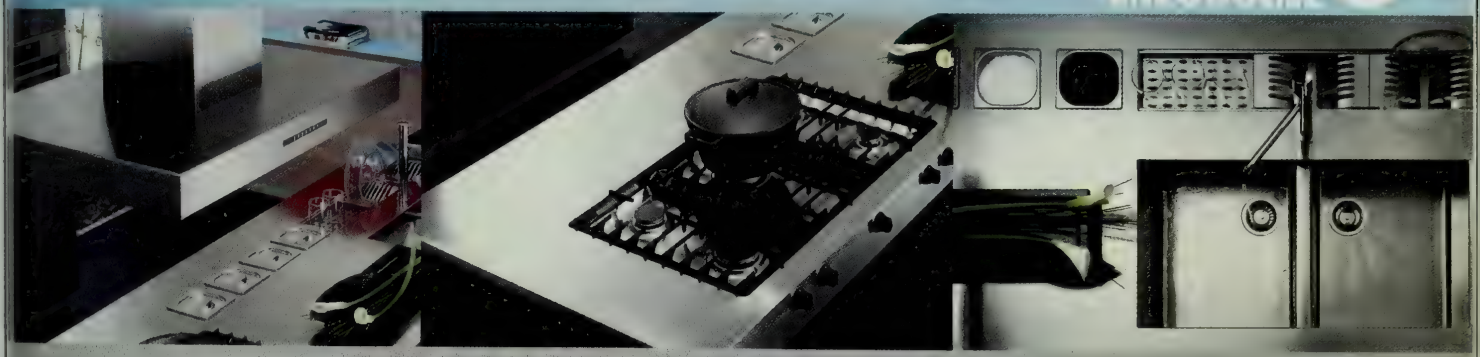
Ascan Mergenthaler, the partner in charge of the project for the firm, comments, "We used the water theme to bring the Mediterranean a little closer. The ceiling had to be attractive, lively, and playful, not this oppressive plane hanging over you. The bubble patterns are computer-generated, and they have direction, like the sea, flowing around the cores."

The Forum was master planned by Barcelona Regional, a public authority which oversees strategic long-term planning for the city and its surroundings. Acebillo, who is its director, explains, "The Department of Urbanism deals with the daily problems of the city. This leaves them little margin for speculation about the future. What we do is this kind of forward vision." Building on the experience of the 1992 Olympics, when planners led by Oriol Bohigas used the games to push for major urban improvements, Barcelona Regional has



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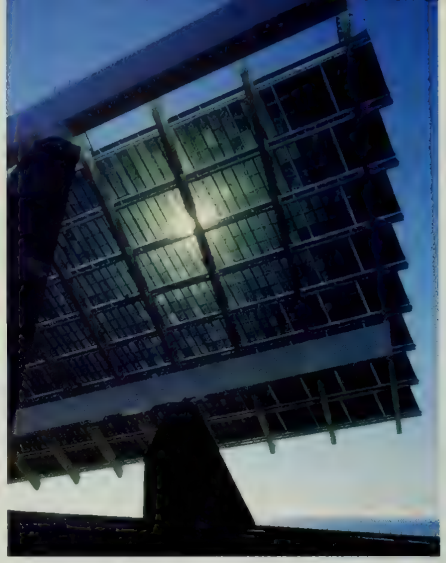
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developed into a remarkable planning instrument, producing comprehensive, integrated programs that cover all aspects of urban and economic development, and that use local and specific actions to achieve general goals.

The Forum, for example, is part of a global strategy to draw future commercial development to the eastern half of the city, away from the prosperous but saturated western districts, and to promote the growth of new high-tech businesses. The Forum stands at the far edge of this area, known as BCN and comprising 120 blocks of underused industrially zoned land that has been updated with the latest communications services and seeded with investment incentives. To reach the Forum, planners extended the Diagonal to the site, effectively opening the area for development. At the head of the new Diagonal,





The Forum's monumental photovoltaic pergola will have an array the size of a football field.

Jean Nouvel's spectacular Agbar Tower for the Barcelona water authority will open this winter, "a landmark that locates the operation in the public mind," explains Acebillo. Nearby projects include a cinemaplex and plaza by Zaha Hadid, a city museum by Oriol Bohigas, and a district city hall by Madrid architect Federico Soriano.

Farther to the north, a third node of development will focus on the upcoming high-speed-train station at Sagrera. "Almost all our projects originate in infrastructural problems, to which we add an urban dimension," Acebillo concludes. In the immediate area of the Forum, the poor residential neighborhood of La Mina will be restructured with new housing, public spaces, and municipal services, and a technical university is being planned to encourage research and development in new technologies.

Barcelona Regional is also overseeing the restructuring of what Acebillo calls the city's "logistical" services located on its western flank. Plans include an expanded

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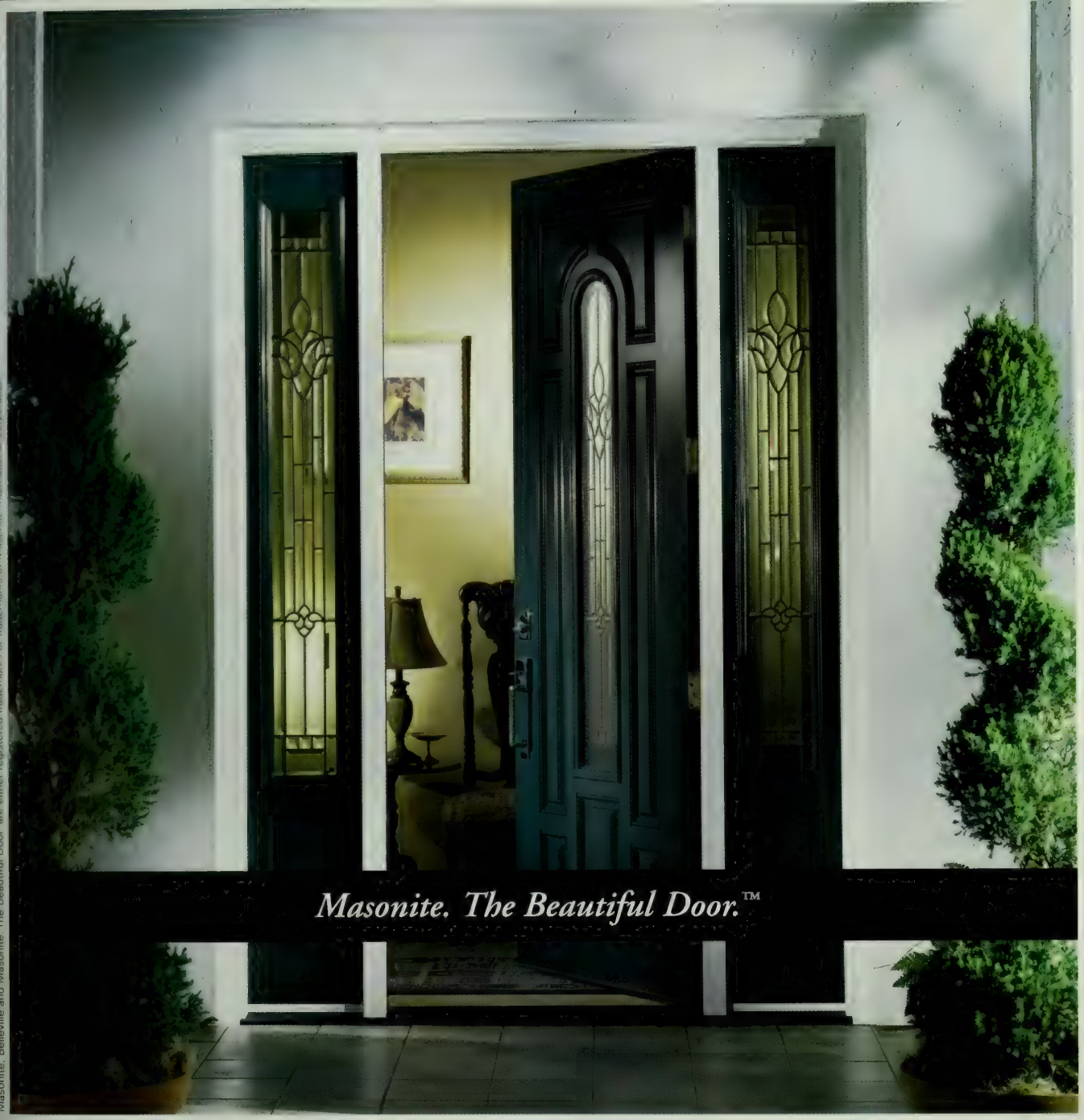
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industrial park associated with the commercial port; Ricardo Bofill's expansion of the airport, with connections to the high-speed train; a second Trade Fair campus designed by Toyo Ito; and a City of Justice being built by David Chipperfield. This area, located outside the city limits in Hospitalet, has attracted commercial developments, including the City Metropolitana office park by Nouvel, the District 38 mixed-use development by the team of Arata Isozaki and Alejandro Zaera, and a hotel by Richard Rogers.

Barcelona is not the only city in Spain with big ideas. In Valencia, construction will finish this fall on Santiago Calatrava's City of the Arts and Sciences, his most spectacular collection of buildings to date, including the soaring, skeletal Science Museum; a planetarium in the shape of an eye, complete with a movable "eyelid" brise-soleil; and a reptilian opera hall with a swooping cantilevered tail. In Bilbao, Zaha Hadid has been tapped to master plan a 150-acre urban district on the riverfront in Zorrozaurre. Workers have finished excavating through solid rock for Peter Eisenman's City of Culture in Santiago de Compostela, a multibuilding complex largely buried under a hill. In Madrid, additions to three museums forming the city's "cultural axis" are nearing completion: the Reina Sofía Museum of Contemporary Art, by Jean Nouvel; the Prado, by Rafael Mone; and the Museum Thyssen-Bornemisza, by the Barcelona team of BOPBAA, Manuel Baquero Briz, and Robert Brufau Niubo. A fourth museum, a Madrid branch of the Caixa Forum Foundation, is being built by Herzog & de Meuron, and Álvaro Siza heads a team that is restructuring the streets and public spaces of the axis. All across Spain, public authorities are using innovative architecture and planning to bring distinction and vibrancy to the public realm, visible testimony to their commitment to cultural and material progress.

But few can rival Barcelona for the scope and ambition of its urban initiatives. The development of the city is historically linked to major international events like the Forum: the Universal Exposition of 1888, the International Exposition of 1929, and the 1992 Olympics. Pascual Maragall, the city's former mayor and current president of Catalonia, once described Barcelona as "a capital without a country," and the city appears to seek in these periodic feats of self-definition and promotion to compensate for the lack of the cultural and economic advantages of centrality that other European capitals take for granted. If this diagnosis is correct, it has produced a powerful instrument for bringing vibrancy and innovation to the public realm, and made Barcelona a model for other capitals worldwide. ■

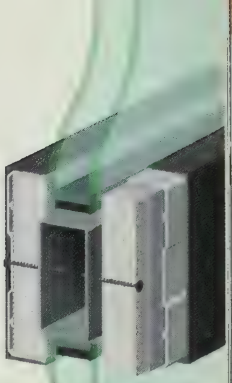


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In a city whose political terrain is treacherous, a Gehry project comes up against a wall

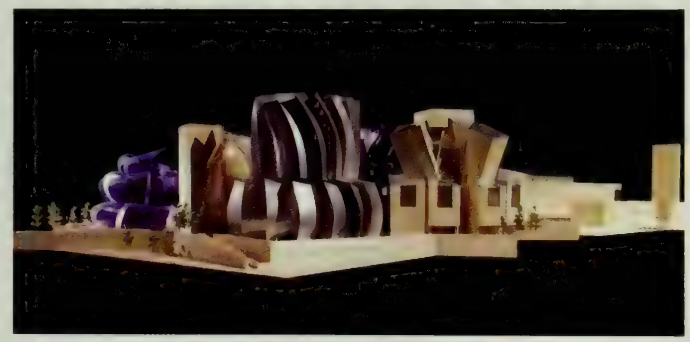
Critique

By Michael Sorkin

In early May, Arnold Schwarzenegger made his first official trip abroad. Among his stops were a visit to troops injured in Iraq recovering at a hospital in Germany, a meeting with King Abdullah in Amman, and a ground breaking in Jerusalem with a raft of government officials. This last was for a Museum of Tolerance, a franchise of the existing Museum of Tolerance in Los Angeles, which combines exhibitions on the Holocaust with more diffuse installations designed to teach principles of tolerance in general. Schwarzenegger has been a generous supporter of the L.A. museum, which is known for its high-tech, interactive exhibition technology. And the museum has returned the favor, rising to Arnold's defense when he was tarred with the Nazi past of his father.

The Jerusalem branch of the organization has been designed by Frank Gehry and may cost something north of $200 million to build. It will include not simply a museum but a congress hall for meetings on tolerance, a movie theater for films about tolerance, a library of tolerance, and a restaurant. The centerpiece of the project is its Grand Hall, a titanium confection with a turbinelike plan that Gehry compares, in spirit, to a mosque. The museum, however, will differ from its L.A. counterpart in not including its central element: displays devoted to the Holocaust. Although such exhibits were originally intended, Yad Vashem, Jerusalem's historic Holocaust memorial, museum, and archive, objected to an invasion of its proprietary territory.

The Museum of Tolerance arrives with high hopes and the strong support of the right-wing Likud government, most prominently Ehud Olmert, former mayor of Jerusalem. The reasons exceed tolerance; the museum's sponsors avow that it "is forecast to become a stimulant for economic, cultural, and educational growth, as well as a boost to tourism resources." Indeed, according to Rabbi Marvin Hier, director of the Simon Wiesenthal Center, the umbrella organization for the Los Angeles museum, with the completion of the Israeli project, "the hotels and streets of Jerusalem will be bustling once more with millions of visitors from around the world, many of whom will come especially to see our center as they have come to see the Gehry-designed Guggenheim Museum in Bilbao, Spain."



Gehry's design for the Museum of Tolerance features a twisting Grand Hall.

This so-called Bilbao effect has captured the imagination of municipal authorities around the globe, who understand the phenomenon—with its dramatic economic impact—to be almost entirely the outcome of flamboyant architecture, the actual content of the various dream projects seemingly of secondary importance. The easy slide from an art museum to a museum of mass murder is thus accommodated by foregrounding the envelope, emphasizing its meanings over those within. Presumably those millions from around the world will come for the uplift of Gehry's design, not the horrors depicted inside.

The project's reception in Israel has been, to put it mildly, mixed. As the distinguished historian and former deputy mayor of Jerusalem Meron Benvenisti wrote in the Israeli daily *Ha'aretz*: "It is difficult to imagine a project so hallucinatory, so irrelevant, so foreign, so megalomaniac as the Museum of Tolerance. The mere attempt to stick the term *tolerance* to a building so intolerant to its surroundings is ridiculous. Others have already referred to the extravagant arrogance expressed in the geometric forms that can't be any more dissonant to the environment in which it is planned to put this alien object. There's no need to waste words on the absurdity of a Museum of Tolerance planted on part of an ancient Muslim cemetery, some of which has long since been turned into a parking lot and will now be topped by spaces in which people are meant to learn about tolerance, mutual respect, and religious coexistence."

Benvenisti's skepticism is echoed by Esther Zandberg, the architecture critic for *Ha'aretz*, who wonders why Kikar Hatulot, a "highly popular urban plaza" that currently supports an ethnic market and a range of informal social activities on the site, is being eliminated for the building. Zandberg takes special umbrage at the Wiesenthal Center's refusal to make plans and images of the project public—despite their having been published in 2002 in the Japanese magazine *GA*—an embargo she claims is designed to forestall opposition and humor potential funding sources. Zandberg also shares Benvenisti's sense of the irony of erecting a "temple of tolerance" in a city so mired in fanaticism.

What better place, it might be argued, for a museum of tolerance? Certainly, the architectural component of Benvenisti's argument is dubious, a matter of taste, especially given the stultifying monotony of so much of modern Jerusalem. Indeed, there was a faction in Bilbao that took the same line about the Guggenheim's aesthetic impropriety. But the center of Benvenisti's objection is telling: Can this building have anything to do with promoting understanding between Israelis and Palestinians? That the answer might

Contributing editor Michael Sorkin is the head of the urban planning program at The City College of New York.

be "no" was dramatically reinforced for me during a trip to Jerusalem in April, when I visited the Israeli "security fence" where it passes through the Abu Dis neighborhood, less than a mile from the site of the new museum. Here was intolerance materialized, a 30-foot-high wall of concrete barricading Palestinians from the center of the city, from jobs, from friends and family, from medical care, and enclosing Israeli Jerusalem in a terrible illusion of security.

The two expensive constructions cannot be separated: Their conflict is clear. A community cannot simultaneously repress its neighbor and proclaim its love of tolerance without hypocrisy. By identifying tolerance with an enormous building with a vaguely defined program, tolerance becomes an object of consumption rather than an act of conscience. More, the idea of constructing a beautiful center in which people—those invited by the institution—can discuss their differences short-circuits obvious matters of the inequality between those building it and those with whom they might have discussions, furthering the imbalance of power and rights that fuel the conflict. As Herbert Marcuse observed, tolerance can also repress, an effect literalized in the substitution of a controlled environment for an existing public place, a place of both accidental and elective encounters rather than the scene of purely orchestrated and mediated events.

This museum, above all, is a rhetorical project in which a building is substituted for the harder processes of bridge-building, for the myriad acts of fairness that characterize a tolerant society. Gehry's building, in particular, with its familiar fragmentary style, uncomfortably evokes the "deconstruction" of Yasser Arafat's headquarters in Ramallah into a pile of rubble by Israeli security forces. The painful contrast between these two places makes the absurdity of the new construction (we build shining monuments to our sense of tolerance while we blast your institutions to bits) so much more profound.

Co-opting tolerance?

But my questions are for the architect. Will an extravagant building advance the cause of tolerance or simply stoke resentments? Is any sectarian attempt to co-opt the idea of tolerance for its political armamentarium worth supporting in an atmosphere as riven as Jerusalem's? What is the real purpose of this project? If it is to try to heat up the Bilbao effect with a museum of genocide, is this really a project an architect of conscience should participate in? Does Gehry think that describing the central hall of the complex as being "like a mosque" will really establish the tolerant credentials of this project?

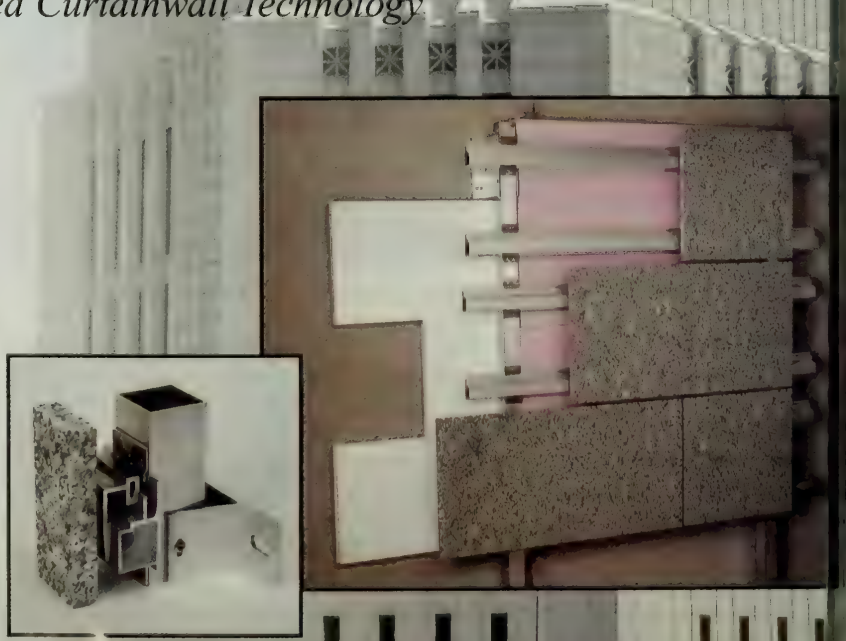
Although Gehry is generally gnomic in his political utterances, an interview in *GA* revealed that he is not altogether unaware of the political geography of this undertaking. He speaks of his satisfaction that the project was moved from its original site in a more peripheral location because it was opposite a proposed Israeli jail. The new site is opposite a courthouse, a distinction probably lost on most Palestinians who pass through the judicial system, the same Palestinians who will be prevented by the wall—their permanent jail—from visiting the Museum of Tolerance erected to stimulate friendly discourses of difference.

Eminence has its responsibility, which extends beyond the realm of professional practice: We have high expectations of our best artists because their work and words carry special weight. It is not possible to build this project without an opinion on larger issues—real issues of tolerance—in the region. What is Gehry's? This is not a question of the use of titanium versus Jerusalem stone. It is one of justice. ■

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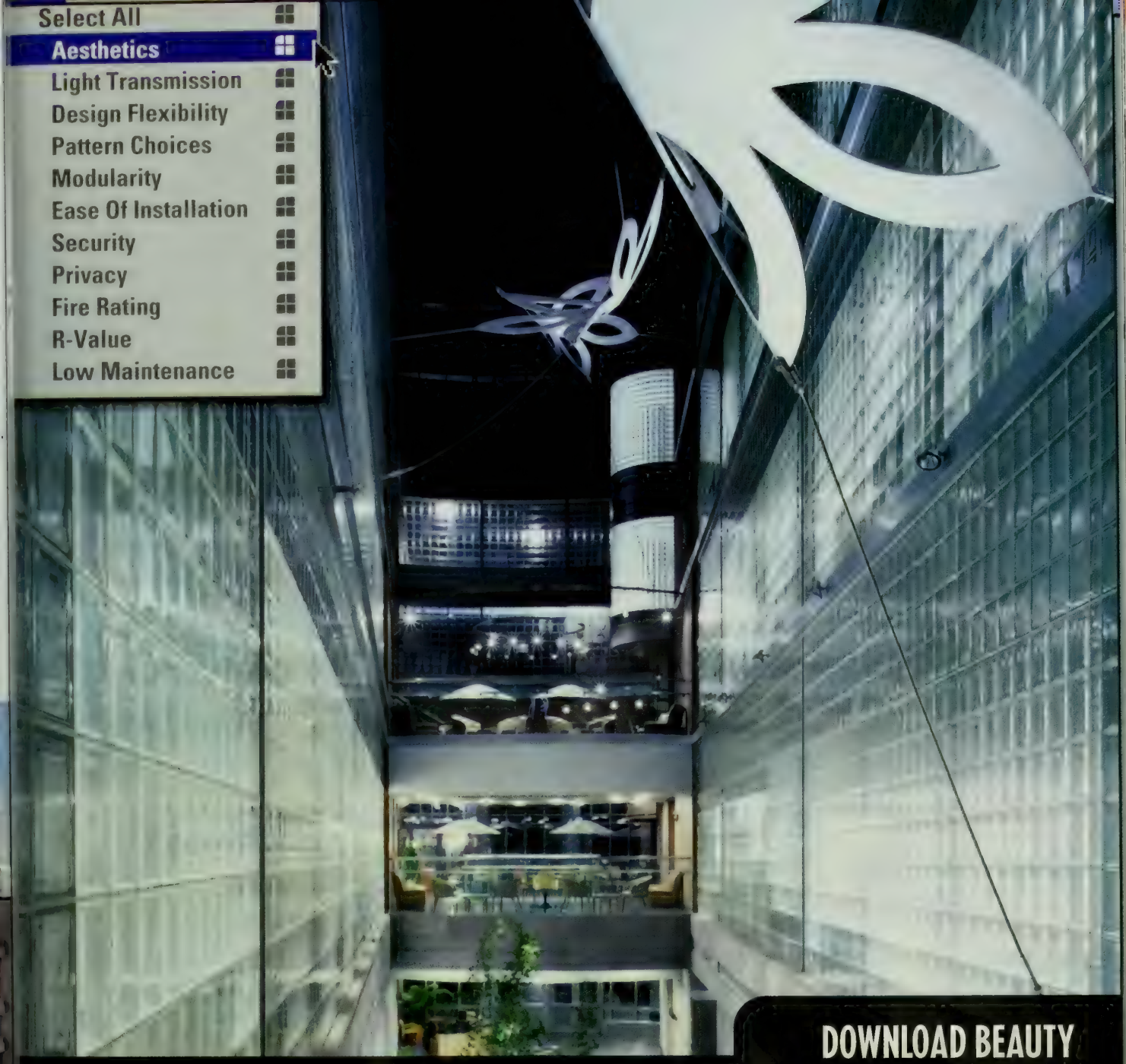
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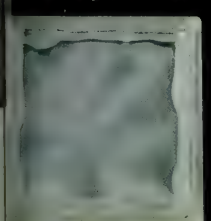
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Art Center College takes design discourse public

Commentary

By Joseph Giovannini

Thomas Jefferson, who extolled the moral virtues of the land over what he considered the evils of the city, invented the idea of the American campus at the University of Virginia and set a lasting tradition of academia removed from the city in a purer world of its own. Design conferences have followed suit, famously in Aspen, Colorado, and, recently, at the TED conferences in Monterey, California, idyllic places where clean air presumably gives that extra boost of clarity.

In March, the Art Center College of Design in Pasadena, California, challenged all that with its first biennial design conference, "Stories from the Source: Design Excursions Out of the Ordinary." In the epicenter of American suburbia, not far from the oak-spotted Arroyo Seco Park and the Huntington Gardens, Richard Koshalek, Art Center president, brought his school off its serene hillside campus and design conferences out of their bucolic hideaways into the grid and grit of the city. The conference inaugurated the first building of the school's new South Campus, accessible to anyone just off the Pasadena freeway or the Gold Line, one of Los Angeles's new light-rail lines. Koshalek joined what seemed to be mutually exclusive spaces: asphalt and the ivory tower.

In the midst of shaping a new outreach campus in the thick of downtown Pasadena, where he plans to open design to a wider audience on a daily basis in a complex of old industrial buildings, Koshalek linked the urbanizing polemic of his new building with a conference that brought an international roster of speakers together in a sustained moment of academic extroversion.

He also pivoted the conference in the direction of the neighboring California Institute of Technology, opening up Pasadena's other self-isolated campus just down the road by bringing its scientific discourse into the design loop. Cal Tech president David Baltimore, a Nobel laureate in biology, opened the conference with a breathtaking talk explaining no less than the design of the universe as a self-organizing system of forces. Charles Elachi, director of the Jet Propulsion Lab, closed the conference with an inspiring presentation of the story behind the Mars Rover.

The two-and-a-half-day event took place in a huge wind-tunnel facility recently remodeled by the Santa Monica firm Daly Genik. With images of speakers projected on multiple screens the size of Mt. Rushmore's presidents, the cavernous building conferred grandeur simply through the psychophysics of size.

Bookended by Baltimore and Elachi, speakers ranged from car designers and cartoonists to advertising gurus. Frank Gehry—who is designing a library on the original Art Center campus—Thom Mayne, and Greg Lynn represented architecture. But anyone who came expecting to find architecture billed as the mother art, at the top of a design pyramid à la Beaux Arts or Bauhaus theology, was disappointed. As portrayed in this conference, no such controlling hierarchy exists in design, which has been completely balkanized.

The Art Center is famous for training car designers, and appropriately, General Motors was the main conference sponsor, providing one of the most pointed speakers, Bob Lutz, a GM vice president. A legendary design executive, he stated that Detroit lost its passion and market position when designers were marginalized, and that design actually now makes the defining difference between cars, which otherwise increasingly exhibit the same standards of engineered performance.

Art Center senior vice president Erica Clark and Chee Pearlman, former editor of *ID* magazine, shaped the program as an open system, to cast a wide design net and capture a broad range of figures.

The putative theme of the conference was narrative, a pet subject in a postmodern era no longer focused on abstraction. But few people sustained the topic beyond lip service, and the occasional references did not add up, even in a Pointillist way, to a larger picture transcending independent disciplines and portraying, as the brochures promised, "design as the core of innovation and the medium in which the stories of our time are told."





James Dyson (left), inventor of a see-through vacuum cleaner, spoke of honesty in design. The Art Center, known for training car designers, held the conference in a wind-tunnel-turned-school-building by Daly Genik (right background).

Without tight focus, the conference took off with a refreshing, provocative nonlinearity, producing an unpredictable sequence of figures. It was a big tent of designers representing different disciplines and m.o.'s. Japanese polymath Eiko Ishioka, who has designed everything from TV commercials to Olympic sportswear and sets for the play *M. Butterfly*, displayed a heroic yet surreal sensibility. In an almost confessional talk, Maira Kalman escorted the audience into her small

Joseph Giovannini is an architect and the architecture critic for New York *magazine.*

studio, where she snuggled up to her subject with the warm introversion that permeates her children's books and *New Yorker* covers. Her subject, in its way, was the sensibility of subjectivity—a far cry from the objectivity of the amphibious robots, for example, created by Berkeley professor Robert Full, who demonstrated that the design of the muscles and skeletal parts of his robots (and by extension, living creatures) themselves determine patterns of movement, not the brain.

Standouts included Cameron Sinclair, charismatic founder of Architecture for Humanity, which organized a design competition for transitional shelters whose very construction builds communities through the training of local labor forces. Lee Clow enchanted the audience with TV ads that were filmic haiku. Clow is the man who created the *Think Different* campaign for Apple after Steve Jobs took back the company and needed to announce its change of ethos—back to creativity—before any new products were developed. Peter Girardi, founder of Funny Garbage, detailed his intellectual biography, from *Mad Magazine*—"vital to my survival"—through cereal boxes and his career as a graffiti artist roaming New York's subway yards. What he calls "crap culture" is the grist for his art.

The great value of the conference was the presentation of a huge amount of material in a raw, virtually unedited flow, sometimes with serendipitous juxtapositions. The downside was an inability to develop chance intersections of serious ideas. Lutz noted that in car design the "passion and emotion essential to good design" belong to the "skilled designer with a skilled clay modeler," but escape computer modeling with its emphasis on a surface vocabulary. Greg Lynn begged to differ, noting that he had a passionate relationship with his computer. He spoke of new digital technologies coming together as a crucible for "new kinds of synthesis," forging a new moment: "Computers have leveled the field," he said. Other than Lynn's commentary, the computer as the ur-instrument across disciplines was never discussed, even though it provides design a potentially unifying technology, and a consolidated narrative.

Soft-spoken James Dyson, who invented the see-through, bagless, cyclone vacuum cleaner that has humbled Hoover, also took on Lutz implicitly. Dyson champions honesty in design as a direct expression of engineering, not styling.

Thom Mayne advocated design generated by systematic operations rather than composition, a position that theoretically eliminates the author. Yet no one took up the argument, not even Gehry, a master composer. Simmering just below the surface of all the talk was the issue of subjective versus objective design, the emotional versus the rational.

Graphic designer Bruce Mau delivered perhaps the only overview of design in a talk about massive change. He spoke of the abandonment of traditional disciplines like graphics, architecture, and industrial design in favor of a globalized design culture based in broad economies. But his potentially explosive observations remained self-contained. The inability of the event's format to develop these idea intersections across standalone talks condemned the event as a whole to the anecdotal. The conference left the impression that it was less about ideas than energy, not a synthesis of thought but a confluence of figures designing in parallel universes. Chee Pearlman said she conceived the conference like a magazine, trying for the stimulating mix. She succeeded. But sometimes you want, and need, to read a book. ■

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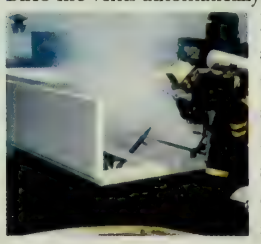
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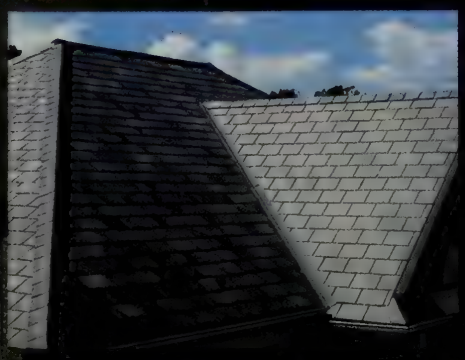
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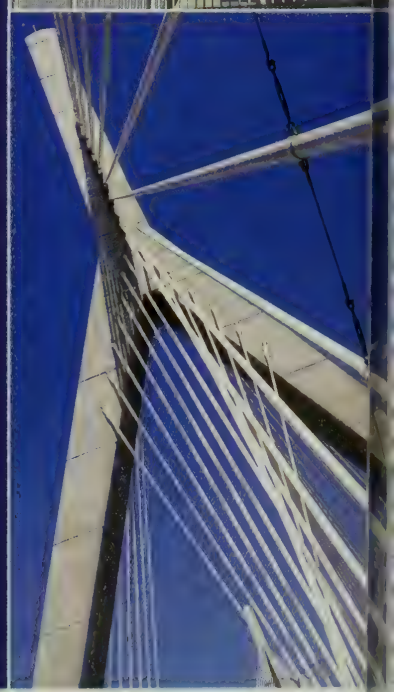
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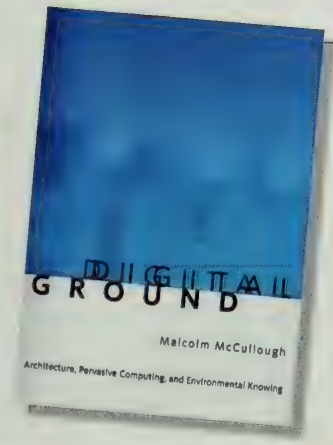
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Design_Shift: How computers and the architects who love them are changing the world

Books



Digital Ground: Architecture, Pervasive Computing, and Environmental Knowing, *by Malcolm McCullough. Cambridge, Mass.: MIT Press, 2004, 262 pages, $38.*

The pervasiveness of computers and other digital technology is, for Malcolm McCullough, not a curse but a design challenge. In this well-written book, McCullough, associate professor of architecture and design at the University of Michigan, leads us through a well-reasoned argument for embracing good design as a way of offsetting many of the intrusive effects of computers in our lives.

There are more of them than there are of us. A decade ago, the number of microprocessors (those little chips that run all kinds of electronic gadgets) surpassed the globe's human population. Today, computers and other electronic devices are ubiquitous, McCullough writes, because they are now imbedded in our world, everywhere, where we can't see them. They have become like electricity itself—surrounding us, yet invisible, and just as essential. Omnipresent computers change the places and ways we get information and interact—it can happen anywhere, anytime—and thus upset daily living. This is just one of the reasons that the blabbering cell-phone user next to you on the train or on the sidewalk is so annoying—the context for discussing the personal is now public.

For McCullough, this is the crux of the situation: The placelessness of our digital lives (access from anywhere, to anywhere) makes it even more important for our bodies to be situated in an identifiable space, in a nurturing place. Reading McCullough, I was reminded of Alvin Toffler's observation more than 25 years ago that high tech increases the need for high touch. The more estranged we become from the material here-and-now, the more we need grounding in it.

McCullough's answer is "digital grounding," an approach to architecture that emphasizes place-centered design. He explores these ideas most fully in Chapter 8, the heart of his book. McCullough does not see place as a nostalgic throwback. Instead, place is purposely designed for social interaction. It gives our digitally dominated lives a locus, in which the new conventions of living can be performed. It is not a retreat from technology, but an attempt to balance the unstable digital realm with our human need for stability. "In our age of technological saturation," he observes, "response to place becomes the most practical adaptation strategy of all." This book offers architects, designers, and everyone else a way to think about how we might intelligently respond to the computer kudzu without letting it take over the garden. *Michael J. Crosbie*

Next Generation Architecture: Folds, Blobs, and Boxes, *by Joseph Rosa. New York: Rizzoli International Publications, 2003, 240 pages, $45.*

Next Generation Architecture looks at the range of work being shaped, rendered, and fabricated by digital technology—work that includes folds, blobs, and morphed boxes. Rosa traces blob construction from its predigital forerunners—Frederick Kiesler, John Lautner, and Buckminster Fuller—to Frank Gehry and the younger blobmeisters (including Greg Lynn, Doug Garofalo, Iwamoto Scott, Jakob + MacFarlane, Kolatan/MacDonald, William Massie, SHoP, and UN Studio). Rosa credits Bernard Tschumi for disseminating digital design by establishing the first paperless design studios at Columbia University in 1994. Rosa notes that most digiterati either taught or studied there. He cites Gehry's Experience Music Project in Seattle, completed in 2000, as a "model for what digital blob architecture can be in the 21st century" and Eisenman's 1997 scheme for the Staten Island Institute of Arts and Sciences as a model for the digital fold building.

Digital design, rather than being reductive, writes Rosa, is fusing with other media to generate new types of buildings that can respond to the human voice, other sounds, and/or physical movement. He observes that digitizing the design process has allowed architects to explore a sort of critical digital regionalism that incorporates conditions of site, program, and culture. Among Rosa's examples are the landscapes and urban design work of Field Operations (Stan Allen and James Corner). Not surprisingly, digital architecture exhibits optimism about architecture's possibilities and is changing the architectural office, which can now exist anywhere designers have access to hard drives.

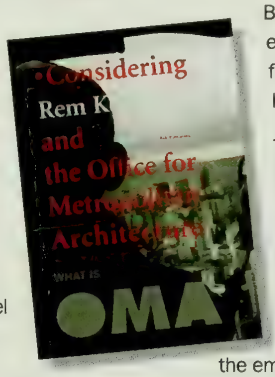
Many of the projects in this book are unbuilt. Among built exam-



ples is SHoP's temporary structure in P.S. 1 Contemporary Art Center's outdoor courtyard on Long Island City, New York. Completed in 2000, it is a tilting, rolling, blob-shaped surface, made of 6,000 2-by-2-inch cedar strips that incorporate roof, walls, benches, and boardwalk. Visually and physically engaging, it tells me that although digital architects may have replaced such architectural standards as beauty, scale, and proportion with new values that prize the smooth, supple, and morphed, as Rosa writes, their

work will be judged by the same criteria as more familiar architecture. We'll still ask how well a building performs, whether its form, materials, size, and composition are appropriate to its mission and context, and whether it lifts the spirit. And don't forget beauty. We value it now more than ever.
Andrea Oppenheimer Dean

What is OMA: Considering Rem Koolhaas and the Office for Metropolitan Architecture, *by Rem Koolhaas. Rotterdam: Nai Publishers, 2003, 184 pages, $30.*



What is OMA is a collection of essays from a respected publisher in the Netherlands, yet none of the authors, who include Aaron Betsky, Neil Leach, Anthony Vidler, Michael Sorkin, and Frederic Jameson, is credited with editing the volume. Moreover, the pictures of Koolhaas's buildings and projects do not directly relate to the text.

This compact volume is mostly hagiography, often disguised as criticism. Koolhaas is portrayed as the architect of our time who has most successfully tamed communications and media and has turned architecture into a "system of representation," what many avant-garde intellectuals believe it should be. His attitudes, his buildings, his personal style, and his writings are presented as being prescient about the 21st century. He is pictured as understanding, like no architect before him, what cyberspace, globalization, and late capitalism really mean. In this regard, he is compared to such geniuses of the past as Leonardo da Vinci, Aldous Huxley, and Jonathan Swift (in the essay by H.J.A. Hofland). But these comparisons do not help us understand Koolhaas; they merely make the authors seem pretentious and their subject look arrogant.

Aaron Betsky is the most prostrate, declaiming, "He has managed, as the only major architect working today, to propose the building blocks for a post-urban condition in which the essential elements of what makes a cohesive culture are dispersed more and more around the globe and appear only as floating, unstable images." If this is true, then it needs some more explanation and some reasons why, say, Zaha Hadid, Peter Eisenman, Bernard Tschumi, or even Leon Krier don't fill the bill. Or, perhaps Betsky might tell us just how the "floating images" represent a cohesive culture, or how a cohesive culture is indeed possible in the modern world. "Floating, unstable images" have been the emblems of the future at least since the Soviet avant-garde of the 1920s, and through Brazilian Modernism of the 1950s (a style and period close to Koolhaas's heart), into the present. And this even before cyberspace came to dominate the minds of vanguard architects.

A few of these writers desist from undiluted endorsement of the genius of "the Dutchman," as Michael Sorkin refers to him in one of the few overtly critical pieces. His one-page essay is excerpted from an article published in 2001; one wishes it had been longer. Another short piece, by Anthony Vidler, excerpted from Vidler's *The Architectural Uncanny* (1992), brings up some significant points about irony in Koolhaas's work, but most of the longer essays are tedious and filled with unsubstantiated, often silly, pronouncements. Ian Buruma tells us, "He has the modesty to be aware of his megalomania." Perhaps it would be better phrased, "He affects the modesty ..."

Koolhaas's own writings tell us much more about him and his ideas than do these essays. The photographic presentation of his work—fragmentary and cobbled together—is not helpful in leading us to an understanding. There are so many references in this book to Koolhaas's own writings that one is tempted to throw it down and pick up one of the maestro's own tomes, which is what I did. *S, M, L, XL* and *Delirious New York* are much more interesting, and better expositions of the Dutchman's ideas than *What is OMA*.

Some architects, like James Stirling or Richard Meier, have been incapable of, or uninterested in, explaining themselves, and they need astute historians and critics to do it for them. Koolhaas is not one of these, so why settle for second-hand theory when we can go straight to the horse's mouth?
Thomas L. Schumacher

Minimal Architecture: From Contemporary International Style to New Strategies, *edited by Ilka and Andreas Ruby, Angeli Sachs, and Philip Ursprung. New York: Prestel, 2004, 175 pages, $65.*



Is Minimalism an architectural style? Is it the description of a cultural logic? "The harder you try to grasp it, the more the subject avoids definition," write Ilka and Andreas Ruby. There is no founding work, no founding manifesto, no exhibition that served as a media initiation of a new style, like MoMA's 1932 show introducing the International Style.

Minimal architecture was a reaction against Postmodernism in the 1980s and Deconstructivism in the '90s, and adherents welcomed every indication of a supposed affiliation between Minimal art and architecture. But the actual relationship was very distant, writes Philip Ursprung. Minimal art, a 1960s American invention, grew out of a rejection of European Modernism and traditional spatial concepts, and Minimal artists, by eliminating frames and plinths from large, abstract artwork, wanted to erase distinctions between art and its surroundings. Paradoxically, a minimal vocabulary applied to architecture reinforced the separateness of the built object from its surroundings. A constant of Minimal architecture, write Ilka and Andreas Ruby, was a wish to cleanse contemporary culture. They quote the product designer Massimo Vignelli's description of Minimalism as "a far-reaching reaction to the noise, the visual noise, the disorder, and the vulgarity of our times." Ironically, Minimal architecture became the style of Prada and Versace, the incarnation of the very materialist, superficial culture to which Minimal architecture had opposed itself.

The authors identify three types of Minimal architecture—Essential Minimalism, Meta-Minimalism, and Trans-Minimalism—and organize projects accordingly. Angeli Sachs observes that Essential Minimalism adopts Minimal art's look—simple geometric forms, modular elements, smooth surfaces, additive compositions, and the rejection of balance and spatial hierarchies—and that it is introverted and obscures its construction. Included in this section is work by Tadao Ando, Herzog & de Meuron, and Gigon/Guyer.

Meta-Minimalism, by pushing out the boundaries, moved Minimalism into a self-reflective phase. Meta-Minimalists, instead of repeating the canon, began playing with it. Examples are Herzog & de Meuron's 1990s buildings with membranelike, often shimmering surfaces.

Trans-Minimalism, rather than adopting Minimal art's vocabulary, write the authors, was inspired by Minimal art's attempt to eliminate boundaries between itself and its



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surroundings. As examples, they cite Shigeru Ban's Curtain Wall House and his Naked House, both in Tokyo, and OMA's Prada Store in New York.

The book's strength lies in overturning received ideas, but its logic requires some assembly. Its title is inclusive, yet it feels incomplete: Discussions about Minimal architecture during the 1980s and '90s took place primarily in Europe and Japan, so the book includes only the work of 20 European and Japanese Minimalists. One wonders where American architects—such as Gwathmey Siegel, Antoine Predock, and Richard Meier—who remained committed to a Minimal vocabulary during the 1980s and '90s, would fit. The book's logic implies a progression from Essential Minimalism through Meta-Minimalism to Trans-Minimalism, but you wouldn't know it from the authors' text, and their chosen projects don't show an evolution. One thing is certain: *Minimal Architecture* is provocative, and after closing its covers, you're likely to look at many buildings not included in its pages with a fresh eye. *A.O.D.*

Masterpieces of Chicago Architecture, *by John Zukowsky and Martha Thorne. New York: Rizzoli/Art Institute of Chicago, 2004, 240 pages, $65.*



This expansive compendium of Chicago architecture highlights the built and unbuilt legacy of a city long renowned for bold achievements in design. Culled from the collection of the Art Institute of Chicago's Department of Architecture, drawings and images narrate the contributions of Chicago architects past and present, including Daniel Burnham, Stanley Tigerman, and Jeanne Gang, while acknowledging the iconic works of Louis Sullivan, Frank Lloyd Wright, Mies van der Rohe, and other masters.

Art Institute curator John Zukowsky's introduction is an unabashed celebration of the department's efforts to acquire, organize, and exhibit the most significant examples of architectural representation. Indeed, the author and his colleagues have much to celebrate. In a little over two decades, their permanent collection has grown to more than 130,000 drawings, several hundred building fragments and architectural models, and invaluable oral histories.

The bulk of this tome presents a straightforward, chronological look at the built and imagined works of Chicago's architectural canon. Alongside classics such as Sullivan's Schlesinger and Mayer Store and Mies's IIT campus lie refreshing novelties like Buckminster Fuller's Dymaxion Car, which was designed for the Century of Progress Fair in 1933. Thrown into the mix are SITE's McDonald's Floating Restaurant (1983), Tigerman's *The Titanic*, a 1978 photo collage commenting on the fall of Chicago's Miesian Modernism, and Dan Wheeler's nautical-inspired North Avenue Beach House (1999). Hand-tinted photographs, watercolor renderings, and digital views all support this broad range of architectural innovation.

In her epilogue, associate curator Martha Thorne addresses Chicago's reputation for conservatism but insists on a millennial move toward nonconformity. Citing Rem Koolhaas's new campus center at IIT, as well as works by rising stars Jeanne Gang and Doug Garofalo, Thorne continues the book's forward trajectory. If the current spate of projects is any indication, the department will soon require more archive space. *Nick Olsen*



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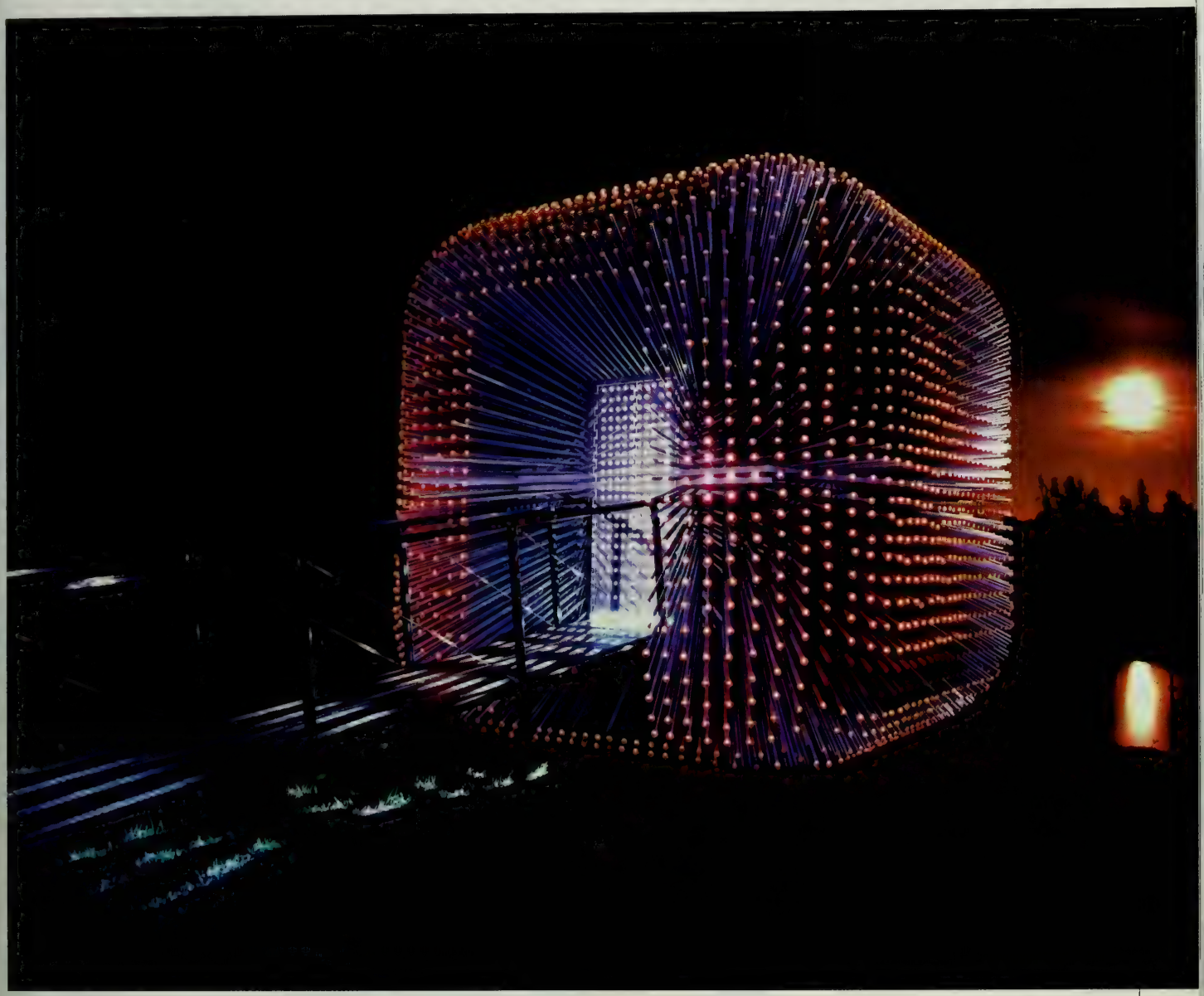


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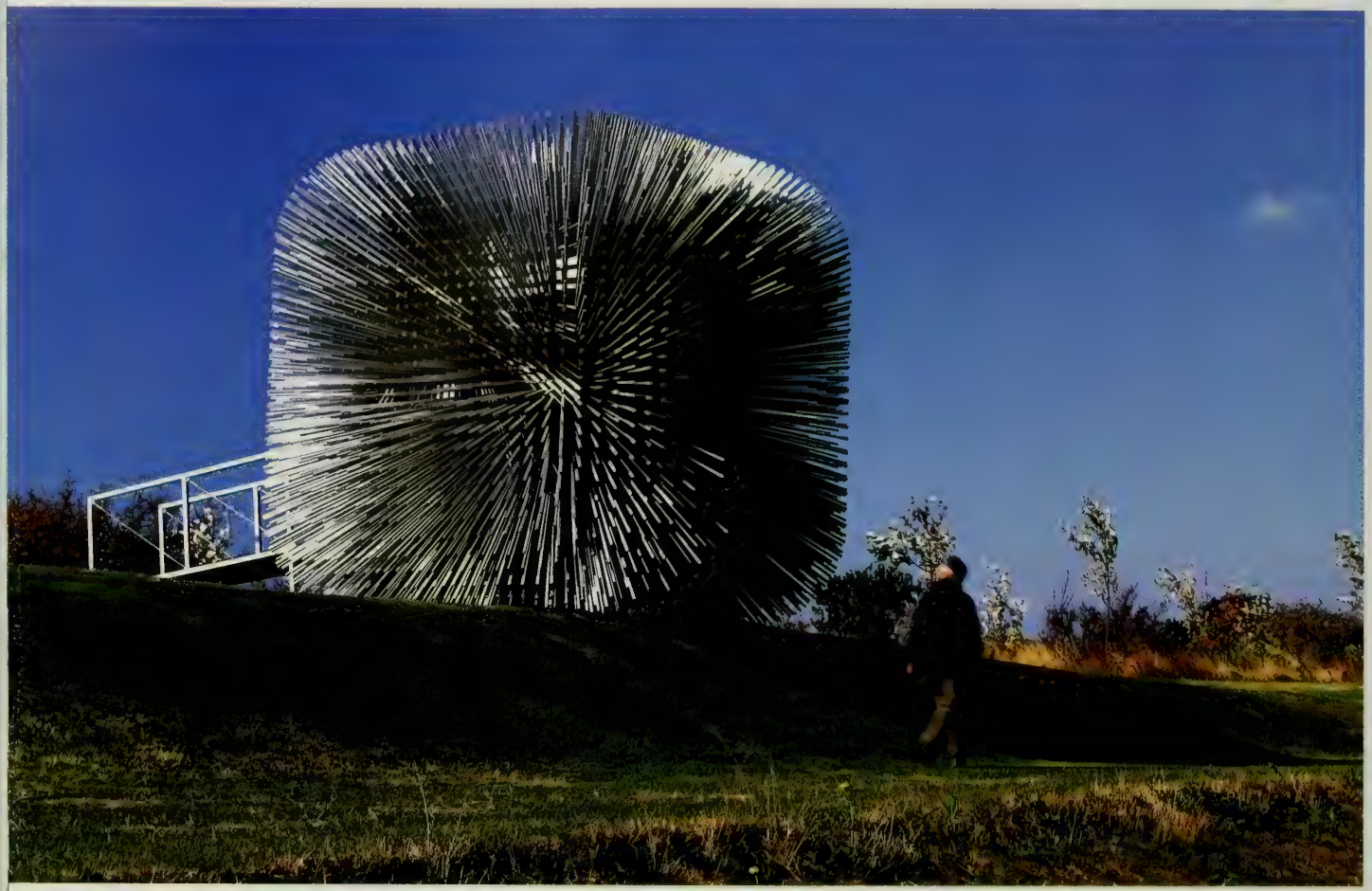
Sitooterie: sculptural folly in the English countryside

By Phyllis Richardson

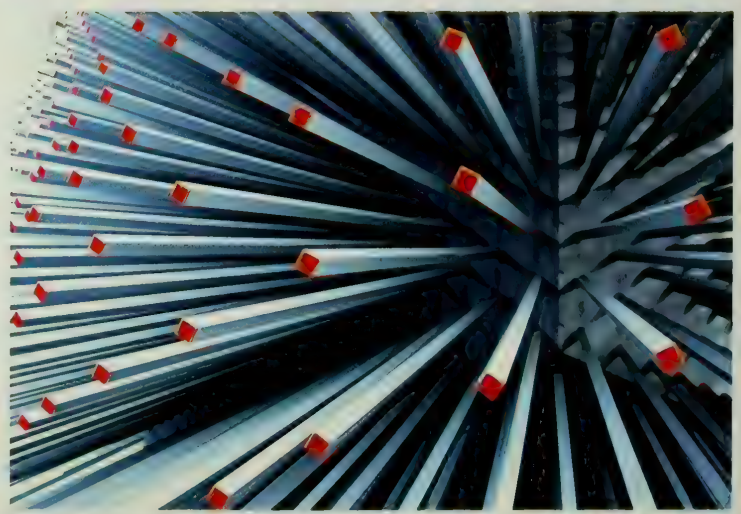
It has been compared to a glowing hedgehog, a spacecraft, and in the designer's own words, "a fakir's bed of nails," yet it is one of the most delightfully inventive follies ever to grace the English countryside. Now sited on Barnard's Farm, a privately owned sculpture garden in Essex, Thomas Heatherwick's anemonelike aluminum form is, he says, "an experiment in texture and in using many thin pieces to make something strong that could be placed any way up."

Some of the quirkiness is perhaps explained in the origins of the commission, a competition sponsored by English Heritage in 2000 to create a gazebolike structure known in Scottish parlance as a *sitooterie*, or a place to "sit oot" in. The winning designs were constructed as temporary buildings in the wooded landscape of Belsay House in Northumberland. One of the most remarkable to spring, almost literally, from that competition was the fantastical scheme wrought by the young, London-based Heatherwick and dubbed "The Hairy House": a wooden cube perforated by 5,000 slender oak staves that lifted the structure off the ground, surrounded it in a prickly shroud, and in

Capped with translucent colored acrylic, the Sitooterie's tubes create an orangey glow in daylight and are lit from within at night by a single bulb.



some cases penetrated to the interior to provide wall texture and support for furnishings. It was this toothpick-style version that inspired the owner of Barnard's Farm to commission the permanent structure that now graces his farmland garden.



Wood turned to aluminum, and production moved from timber-milling techniques to metal-fabrication technology. The essential cubic core, with thousands of predrilled holes and a mass supported on a brushlike agglomeration of extruding members, remains. However, the staves have been replaced by long, thin, hollow rectangular pieces that had to be individually machined by an aeronautical engineering company in Southampton before being assembled on-site. The tubes are of different lengths and all point to the center of the cube. Capped with translucent colored acrylic, they effect an orangey glow in daylight and are lit from within at night by a single bulb. The designer admits, "The lighting is very low-tech." However, precision was essential. The aluminum skin is 0.6 inches thick and is pierced by 4,704 tubes adhered to the central 8-foot cube (which can hold about half a dozen adults) through finger joints that are formed at the end of each piece. With each tube having a hollow area of a mere 0.7 inches square, the designer ensured that the overall impression would be of a fuzzy, though tactile-seeming solidity that, on closer inspection, reveals an even more tactile multiplicity. Heatherwick, who is in the process of building the U.K.'s tallest sculpture in Manchester, has not just achieved a tale of design virtuosity. The Sitooterie is a demonstration of skilled, cutting-edge craftwork—the artful marriage of imagination and technology. ■



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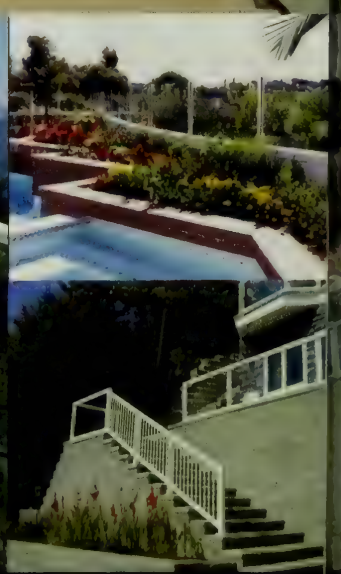
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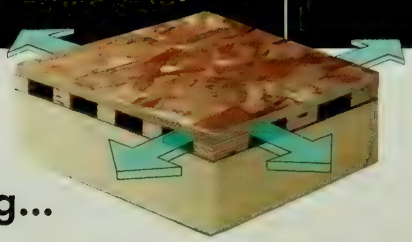
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American Institute of Architects

2004 Honor Awards

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Excitement was palpable the evening of March 3rd at the National Building Museum, where a festive Accent on Architecture Gala dinner hosted by the AIA was attended by more than 1,000 guests—the largest turnout in the history of the event. They came to celebrate the AIA 2004 Honor Award winners for the Gold Medal, 25 Year Award, and Firm Award in the museum's Great Hall, a marvelous setting of open archways, light, and height for such an occasion. When Samuel Mockbee, FAIA, was announced as the Gold Medalist posthumously, his wife, Jackie, received the award on his behalf in a deeply moving speech.

She outlined his life and vision, and spoke of his legacy, both in the continued activities of the Rural Studio and in the careers of his four children. In particular, his youngest daughter, Carol, who works with the Rural Studio as an Outreach Fellow, is completing an unfinished project dear to Sambo's heart: a memorial called the Subrosa Pantheon, a place for contemplation "under the roses." It is a fitting legacy of an illustrious career and will be completed in December 2004.

I.M. Pei, FAIA, then received the 25 Year Award for the East Wing of the National Gallery of Art, focusing his comments primarily on the beauty and force of John Russell Pope's adjacent 1941 West Building, which was the inspiration for Pei's contemporary contribution to the National Mall.

Ted Flato, FAIA, and David Lake, FAIA, of Lake/Flato Architects, which received the Firm Award, offered inspired speeches, then invited their entire partnership to the stage for congratulations. On the following pages, these top honorees are joined by 16 architecture, 8 interiors, and 5 urban design project winners, all of which provide stunning and intelligent examples of design excellence. Jane F. Kolleeny

ARCHITECTURE

From a tiny chapel that contemporizes traditional style to high-rise megastructures monumentalizing Western culture to houses celebrating the simple virtues of nature, 16 winning projects provide examples of stunning design. Architecture jury chair Adrian Smith, FAIA, describes the projects as diverse in typology, scale, context, economic means, and materiality. Common themes include energy conservation, cultural relevance, client identity, clever use of materials, and seamless integration of building services and structural systems into the fabric of the architecture. In this year's AIA Honor Awards program, young emergent talent and mature repeat winners join together in demonstrating that architecture is alive and well in every generation. Jane F. Kolleeny

1



1. Seaside Interfaith Chapel
Seaside, Fla.
Architect: *Merrill and Pastor Architects*

This charming chapel transforms the town of Seaside from an experiment in New Urbanism into a community. Becoming the physical focal point of the town, the chapel conveys a strong sense of place, coherence, and spiritual unity. An elegant example of design and construction detail, it exhibits a sensitivity to form, incorporating traditional style into a modern framework. Natural light floods the predominantly white-washed wood interior, with altar walls stained to match the dark floors made of pinewood salvaged from north Florida rivers.

"Constructed of concrete and wrapped in wood, the chapel is a metaphor of inner strength with a humble exterior and a spiritual core."

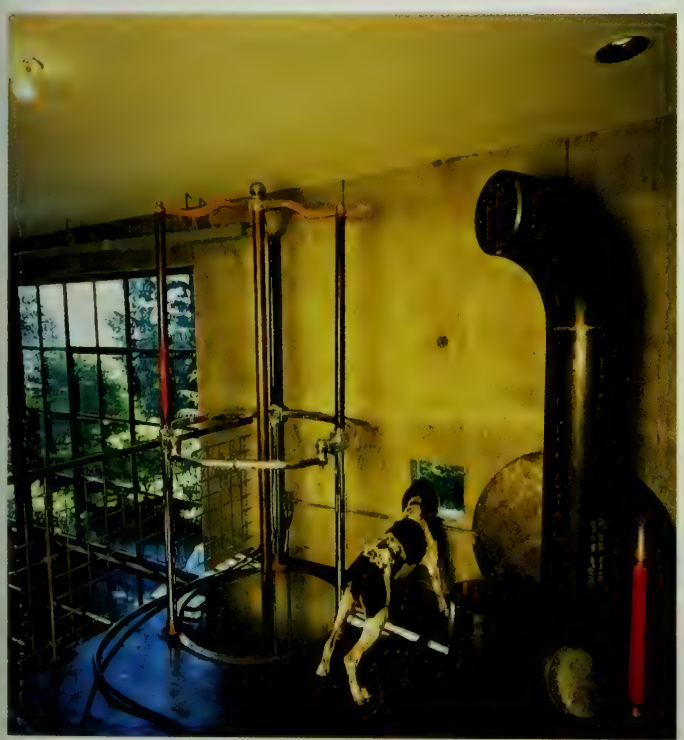


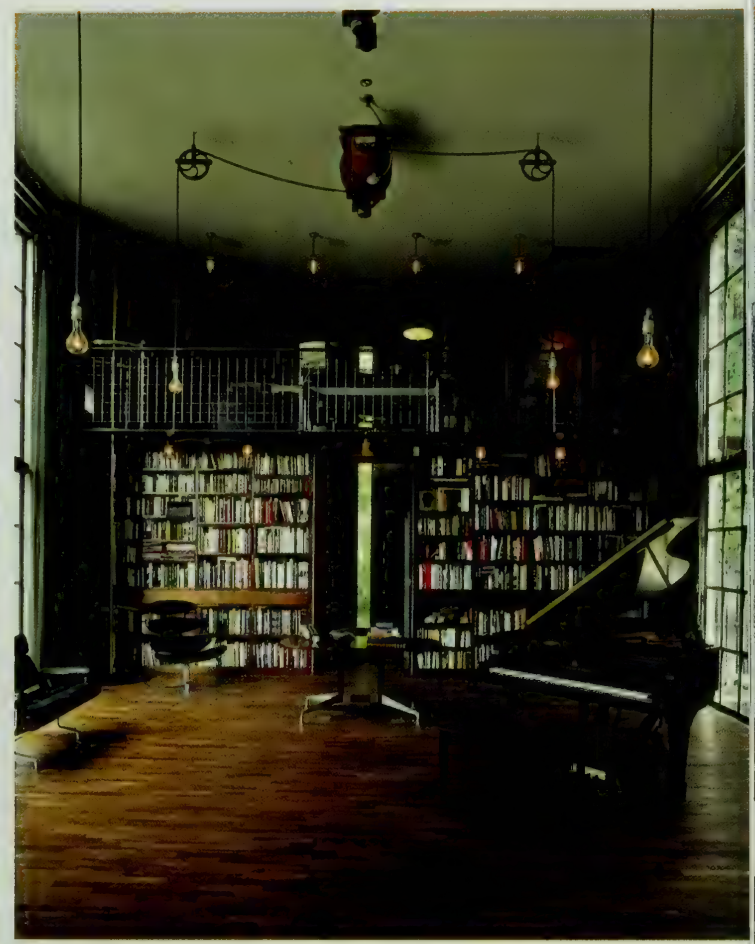


"A very personal space full of elegant moments of whimsy—a place that is meant to be used and enjoyed."

2







2. The Brain
Seattle
Architect: *Olson Sundberg Kundig Allen Architects*

Aptly named The Brain, this film studio provides office, darkroom, and library space so the owner, a filmmaker, can use it as a retreat from his adjacent residence to think and create. The cast-in-place concrete box nestles in the woods of a suburban site, providing intimacy and privacy. Floor-to-ceiling industrial steel windows allow plentiful light, modulated by theatrical curtains. The finely tailored building fits the spirit of the owner.

"Clear planning and exquisite detailing of materials combine to produce a project of incredible richness."





3

3. The Point House
Polson, Mont.
Architect: *Bohlin Cywinski Jackson*

Superbly sited on a secluded peninsula that extends into a large Montana lake, the house establishes a dialogue between land and water. Part of a year-round family compound, it melds gently with the unspoiled natural beauty of the land. Resting among evergreens, the house extends from the rock spine to the edge of the dense wetlands. Building elements are organized along a wall of Cor-Ten steel that slices through the site. Distinctions between inside and out become intentionally blurred with tall walls of glass and large sliding panels.



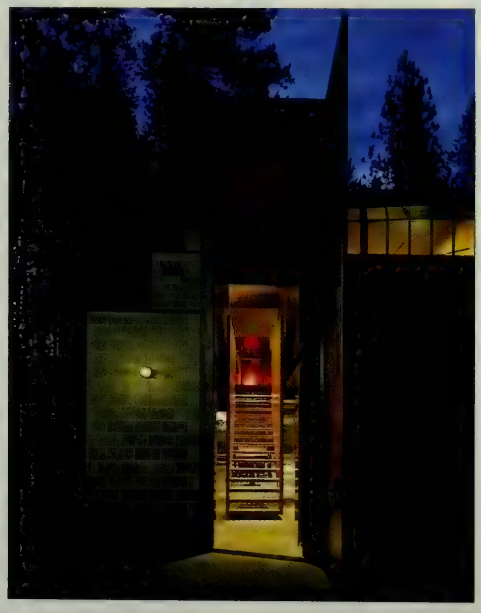


4

4. Chicken Point Cabin
Hayden Lake, Ind.
Architect: *Olson Sundberg Kundig Allen Architects*

This lakeside shelter has a large window wall that literally opens the entire living room to the woods and lake beyond. The simple and durable low-maintenance materials—concrete floors, concrete block, plywood, steel—remain unfinished to age naturally, merging seamlessly with the surrounding landscape. Sleeping 10, this weekend country "cabin" retreat makes big moves with a small palette.





"There is a clarity and elegance in the detailing of the humble and modest materials that ennobles the project with richness."



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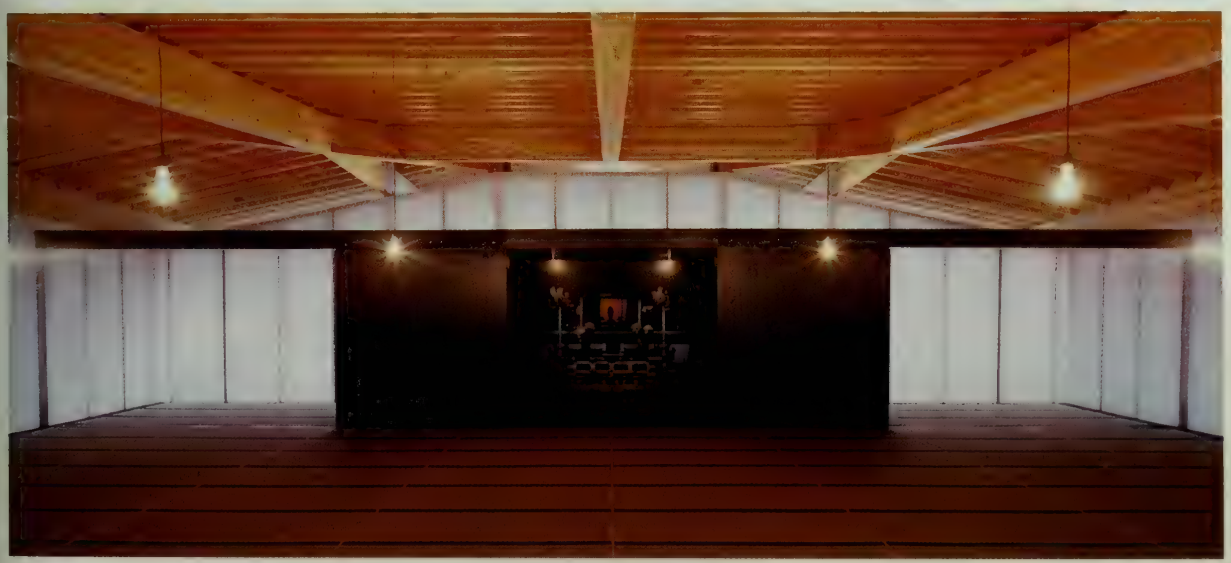
5. Center of Gravity Foundation Hall
Jemez Springs, N.Mex.
Architect: *Predock_Frane Architects*

This new, 3,000-square-foot meditation hall serves as the primary teaching and practice space for a Zen Buddhist compound. A floating, folded metal roof plane sits on purlins that cantilever over exterior walking meditation areas. Beams span over the hall, resting on steel columns. Delicate translucent polycarbonate walls intersect massive rammed earth walls. Sliding wood panels open onto the garden, extending the austere interior space out to the landscape, creating a serene but dynamic sanctuary for contemplation.

"Spare and mysterious, the organic materials and fine detailing melt the building form and the mission together."

5





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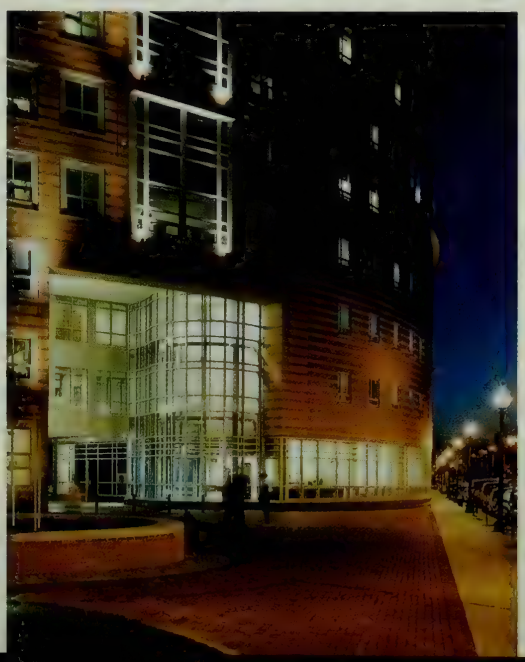
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6. Northeastern University West Campus Residence Halls
Boston
Architect: *William Rawn Associates*

Establishing these three new residence halls to accommodate 1,000 students helps fulfill the university's transformative vision of invigorating its threatened urban presence. The facilities create an exciting environment for students' personal growth; contribute to the university's goal of achieving a higher academic standing; and energize an urban area that has long been unappealing. Opening to the front edge of a new west campus, the dorms engage and unify the university with the city.

6

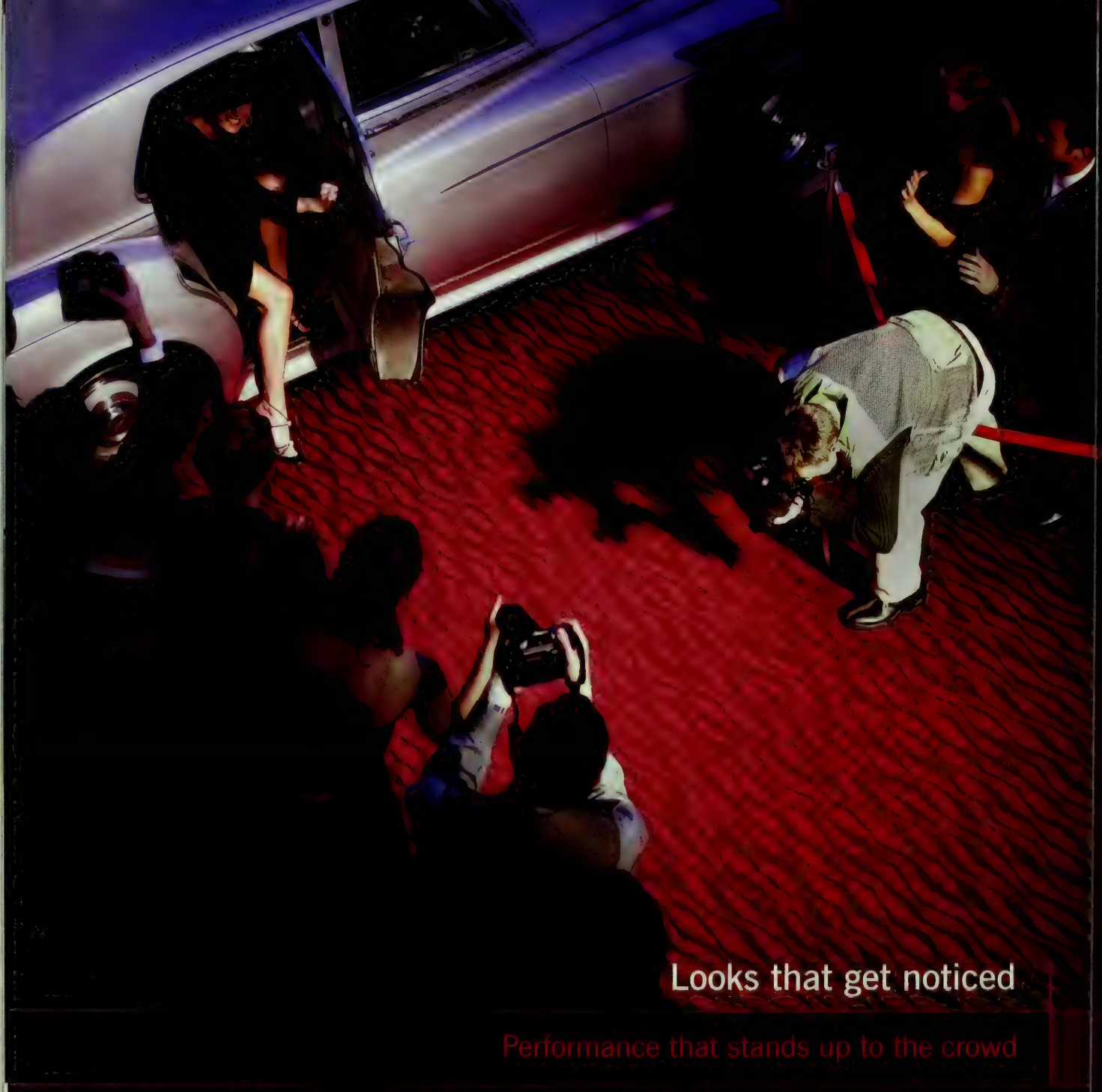






"Tremendous sensitivity, skill, and creativity are shown in the shape and arrangement of the buildings and the assignment of the portals."





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7. Steelcase - Project MAC
Gaines Township, Mich.
Architect: *Thomas Phifer and Partners*

To accommodate an accelerated construction schedule, the architect used prefabricated components to build this two-story spec building. Built to be flexible, the steel frame-and-shell structure allows interior spaces to change in size for a wide variety of uses. Abundant natural light and localized climate control contribute to the amenities. The undulating roof unifies the building with a lightweight canopy. The spatial connectivity of the open-plan interior encourages a humane, egalitarian workplace fostering hard work and creativity.

7

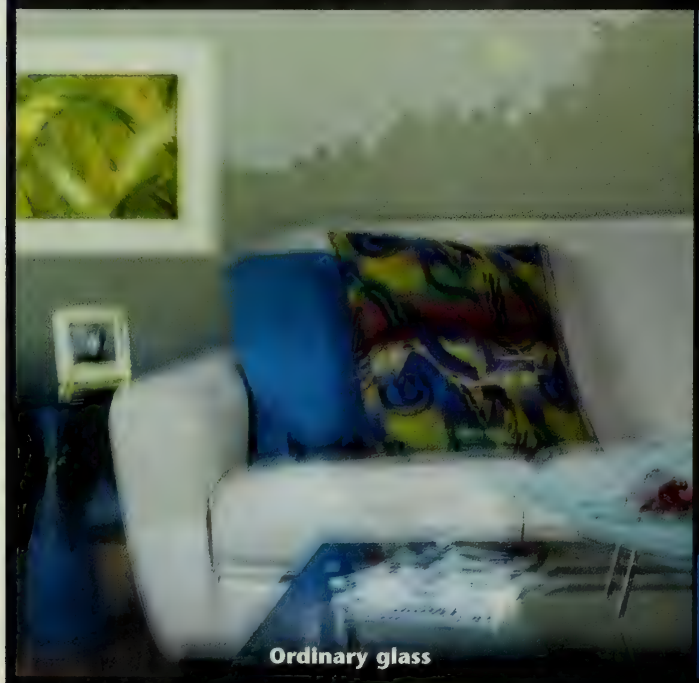
"This project shows that it is possible to design a beautiful and elegant spec office building on a modest budget."

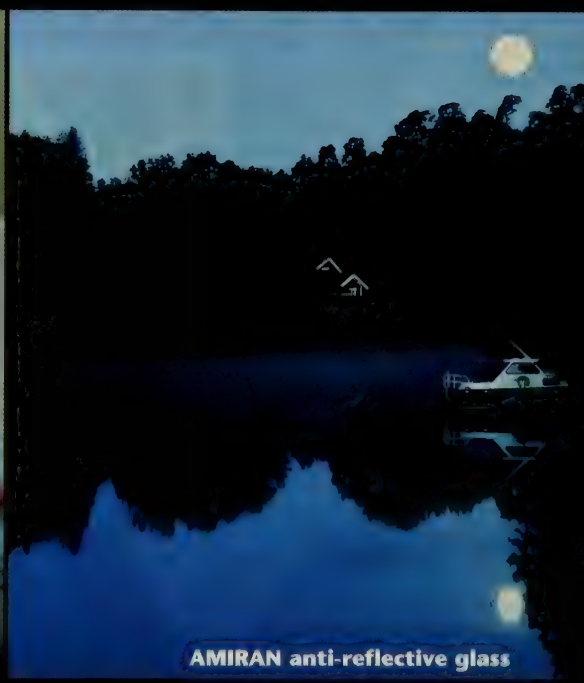




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"An icon for the city, the building's sloping, curving, leaning wall delights all. Walking to the roof garden provides spectacular views of the city and the surrounding mountains."

8

8. Salt Lake City Public Library
Salt Lake City
Architect: *Moshe Safdie and Associates*

This new, $78 million library features a five-story administration block next to a triangular main building for the book stacks, with a glass-enclosed public Urban Room and adjoining piazza serving the city. The building contains many dramatic features, notably the glazed curved wall that borders the stacks, accommodates vertical circulation, and overlooks the outdoor plaza. Reading areas for patrons and remote places for study are accessible by bridges. The building provides a gathering place for study as well as a lively destination for public events.



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"Powerful in concept and beautifully executed, a glass room emerges from a time-worn wooden barn."

9. DoMa Gallery
Baltimore County, Md.
Architect: *W Architecture and Landscape Architecture*
[RECORD, July 2003, page 126]

Two art collectors transformed a historic farm into a place to entertain, live, and display their growing contemporary art collection. A barn ruin with weathered slats sitting on a stone foundation became the centerpiece of this domestic compound comprising a charming group of outbuildings, cultivated gardens, and meadows. A glazed volume inserted within the original barn structure creates transparency and opens up the interior to the landscape beyond.

9





10. Taghkanic House
Hudson, N.Y.
Architect: *Thomas Phifer and Partners*
[RECORD, April 2003, page 140]

Sited high on a knoll at the edge of the woods, this house emerges dramatically as a pavilion of steel and glass set on a plinth. The site borders a meadow to the south, while spectacular views open to the Hudson River valley and distant mountains to the west. Finely detailed, the residence provides 360-degree views. A system of operable exterior sunshades modulates sun and shade. The house takes advantage of the topography by tucking the quiet spaces into the land, which forms a base supporting the light-filled areas of the public functions of the house above.

"There is a seamless flow of outside and inside spaces from the skillful integration of the building into the hill."

10







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11. Los Angeles Design Center and Cisco Brothers Showroom
Los Angeles
Architect: *John Friedman Alice Kimm Architects*
[RECORD, July 2003, page 142]

Restoring this furniture design center in South Central Los Angeles kicks off a plan to revitalize the depressed area, home to many of the city's furniture manufacturers. Simple, utilitarian materials, color, and signage cheer up this cluster of rundown brick warehouses. A former auto court has been transformed into a rich outdoor foyer and public event space for the complex. Hiding, revealing, and/or filtering aspects of the original buildings and environment animates the character of the site.



11



"A project with great energy and bold, artful gestures. A creative way to breathe new life into what are otherwise forgettable fringe buildings."

"This highly refined synthesis of architecture and engineering defines the state-of-the-art office tower for Germany."

12



12. Deutsche Post
Bonn, Germany
Architect: *Murphy/Jahn*

This modern and sustainable office tower consists of two crescent-shaped halves separated by an atrium and rising around a series of nine-story sky gardens, which serve as communication floors and elevator crossovers. A glass outer shell on the building enables natural ventilation and abundant light in all work and circulation areas. Individually controlled, mechanically operated solar shades give this building a human scale and exterior animation that varies throughout the day. In essence, the skin of the building modulates its own climate.



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13. Telenor Headquarters
Oslo, Norway
Architect: *NBBJ/HUS/PKA*
[RECORD, May 2003, page 222]

This complex of open public spaces, enclosed semipublic spaces, and private atrium living rooms supports flexible workstations. Employees have no permanent offices but are issued a mobile phone and laptop and can plug into any available location in the complex to perform their work. The architecture is experimental, with a rich palate of materials, colors, and textures, creating a tapestry which, when combined with the powerful artworks commissioned for the interior, presents a fascinating and satisfying environment.



13



"There is a wonderful informality about the composition that encourages creative thinking and discussion."

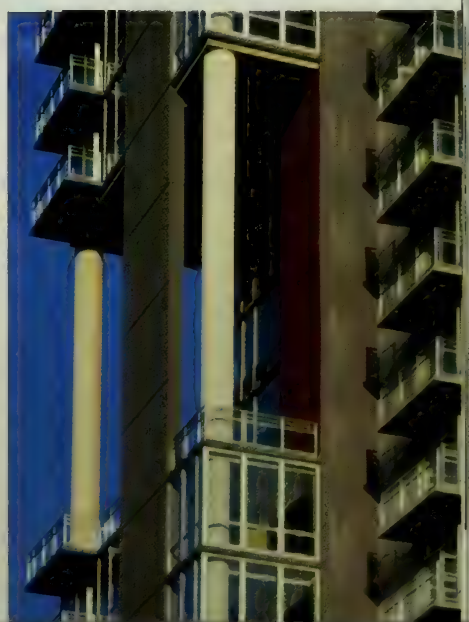
14



"Simple materials, elegant proportions, sophisticated colors, and skybridges make this tower a delight on the Chicago skyline."

14. Skybridge at One North Halsted
Chicago
Architect: *Perkins & Will*
[RECORD, May 2004, page 136]

An icon for urban living in Chicago, this mixed-use project incorporates practical community amenities with an elegantly articulated residential tower. The flexibility afforded residents by intelligent planning provides opportunities for customization of unit size and layout. The glass-enclosed skybridges break up the massing of the building while increasing the number of corner units and views of downtown.



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15. State Street Village, ITT
Chicago
Architect: *Murphy/Jahn*
[RECORD, May 2004, page 130]

Sited across from the college's main quadrangle and Mies van der Rohe's legendary Crown Hall, this student residence conveys a clear response both to the urban context on one side and the campus on the other. The building successfully and elegantly uses its site restrictions and tight linear space to advantage, connecting separated parts of the campus by becoming a pass-through.

15

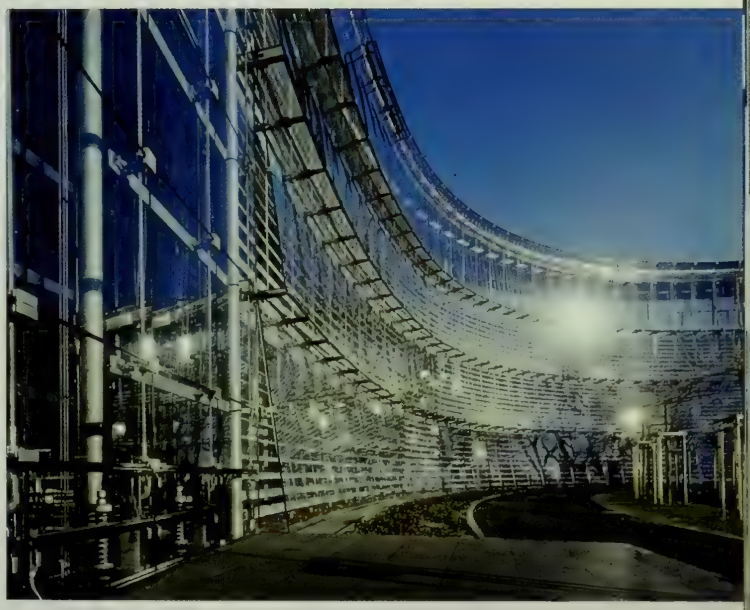


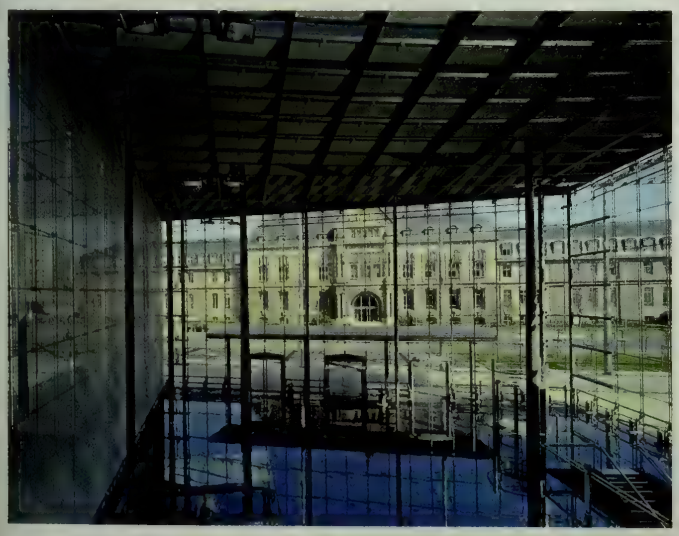
"Rather than designing an innocuous background building, the architect responded with a bold new statement."

16. Bayer
Leverkusen, Germany
Architect: *Murphy/Jahn*

This semi-elliptical office building engages a park forming an interior courtyard; the opposite street side features a pergola over the transparent main entrance. The building appears like a crystal case wrapped around the occupied floor plates. Energy-efficient design combines with unparalleled engineering expertise to make the building both stunning and practical.

16



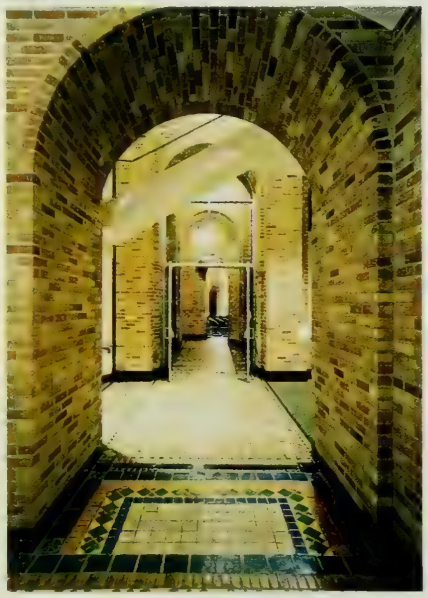


"Every element of this building is about glass. Where floors, walls, ceilings, and even ductwork could be glass, they are."

INTERIORS

This year's AIA Interiors Honor Award winners share the common thread of renovation and adaptive reuse. These eight projects perform similar transformations, either reinvigorating a historic building or brightening an industrial one. Interior Architecture jury chair Lee F. Mindel, FAIA, remarked that [the jurors] "saw a lot of 'flying schreprels' and 'blobs,' but the projects with simple, bold, elegant ideas stood out." Solutions range from inventive and high-tech to traditional and rigorous. From the clever transformation of a historic church into a performance space using acoustic panels to augment the existing design (below), to relocating and enlivening a modern, welcoming library in a formerly uninviting space, these projects sought and found a high level of personal expression beyond the trendy and predictable. Jane F. Kolleeny

1



1. Carol and Carl Montante Cultural Center
Buffalo
Architect: *Cannon Design*

With a sensitive series of gestures, the architect adapted this 1926 historic church into a 600-seat, multipurpose performance space at a liberal arts college campus. Building systems were upgraded for contemporary use and acoustics retooled to meet performance criteria. Sound-reflecting surfaces inserted within the domed volume improve the acoustics without detracting from the design. New forms and materials are articulated cleanly and simply to enhance the old.





"Masterfully handled; the technology becomes a new ornament in an intricately embellished space."

"Christo's installation of blue tents in Japan became a metaphor for the project's master plan and an expression of the client's mission."

2. Pallotta TeamWorks New Headquarters
Los Angeles
Architect: *Clive Wilkinson Architects*

This inventive solution resulted from an inspired vision for a new workplace tempered by radical budget constraints. Tent environments personalized a large warehouse space, creating intimate and distinct work neighborhoods and providing containment for cooling, heating, and lighting. Alleviating the need to build structures, the tents, suspended from the roof-support column grid and stretching in different directions according to programmatic needs, are anchored down by inexpensive, prefabricated shipping containers.



2







3. New York City Public School 42, Queens, Library
Arverne, N.Y.
Architect: *Weiss/Manfredi Architects*

The architect moved the existing library from its former location on the fourth floor to the first floor, adjacent to the school's main entrance and cafeteria, redefining its place and purpose within the school. Formerly removed from students and remote from community-based activities, the library's new central location makes it visible to pedestrians on the street and within easy access of students. A curvilinear wall shaped by lapped plywood winds through the space, defining it and providing shelving, while deep windows with seats invite users to curl up with a book. A silkscreened transparent curtain can be opened or closed and rolling bookshelves moved to reconfigure the space in various ways.

"Organized and funded by the Robin Hood Foundation and built by the school board, this pro bono library is part of a pilot project to improve New York City's urban schools."

3



"The asymmetry in the architect's response relieves the pressure of compliance to the existing, A-frame church."

4. First Presbyterian Church of Encino
Encino, Calif.
Architect: *Trevor Abramson, Abramson Teiger Architects*

This unique intervention in an existing 1950s church served two goals—to bring light into the interior and to create a sense of closeness and reverie for the congregation. The pews were reorganized in the round and the floor of the chancel was brought forward and lowered to bring the pastor and choir closer to the assembly. Religious symbolism permeates the design. Light as metaphor is shaped by irregularly sculpted volumes that provide ample illumination from multiple openings. The two facing curved surfaces that shelter the sanctuary and give the primary form to the worship space resemble hands in prayer. Other features of the design express key elements of the service.



4





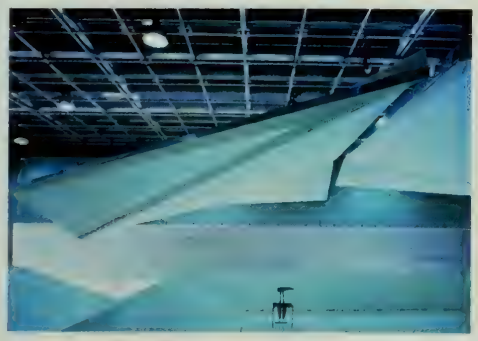

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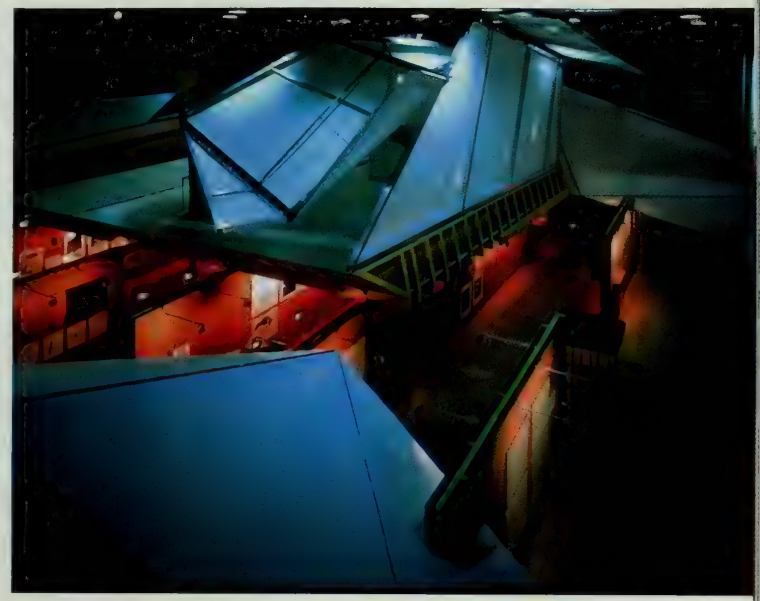
5. NAI Exhibition - *Silent Collisions*: Morphosis Retrospective
Rotterdam, the Netherlands
Architect: *Morphosis*

This exhibition addressed the crossroads that architects are facing in the transition from tangible, physical materials and modes of expression—drawings and models—to the digital technologies that increasingly dominate practice, blurring distinctions between built form and design process. The architect found Rotterdam, with its stratified terrain of soil and water, a fitting place to present this dichotomy by means of a luminous fold suspended in space, which moves slowly, almost imperceptibly, changing in the final moments of the cycle into a surface for projected images of the firm's current work. Two decades of drawings and models are presented in a solid, catacomblike structure beneath. The juxtaposed changing and concrete displays of past and present work illustrate the architect's quandary.

"Conventional notions of ceilings and walls are challenged in this high-tech and poetic exploration of the architect's process."

5





6



6. Academic Center for Student Athletes at Louisiana State University
Baton Rouge, La.
Architect: *Trahan Architects [RECORD, November 2003, page 172]*

This interior renovation creates a sequence of clean, clear spaces that pare down the 1927 architectural language to its essence. The architect retained the building's symmetrical organization while removing remodeling undertaken over the years that had obscured the original interior. A simple and consistent palette of colors—light for the rooms at the building's perimeter, warmer and darker at the core—minimizes visual distractions for the students and allows the original attributes of the historic building to come forth.

"A sensitive interior interpretation shows a sophisticated reading of the original building."




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7. American Meteorological Society Editorial Offices
Boston
Architect: *Anmahian Winton Architects*
[RECORD, June 2002, page 203]

The architect transformed a historic barn and carriage house previously used for storage and staff meetings to new offices for the company's editorial staff. A brick structure topped by a timber roof supported by thick square beams and rafters became host to a modern insertion that is both rustic and refined. Materials such as plywood, structural lumber, fiberglass panels, and unfinished steel complement the character of the existing structure.



7

"Love of detail is celebrated; this looks like it was built by a master carpenter."



8. COop Editorial
Santa Monica, Calif.
Architect: *Pugh + Scarpa*
[RECORD, September 2003, page 156]

The architect converted a single-story structure, designed by Frank Gehry in 1963, into a video-editing facility for the client. Three distinct, freestanding rooms house a conference room, the executive producer's office, and bathrooms, all of which float in the rough space, perched on a neoprene pad above the floor. The architect used unique color and materials to distinguish each room. Bright blue rubber sheeting lines the conference room, while the bathrooms feature white interiors with multihued acrylic panels.

8

"A dramatic, undulating, wood-paneled wall runs the length of the building, enhancing the light and separating the main area from the darkened editing spaces."





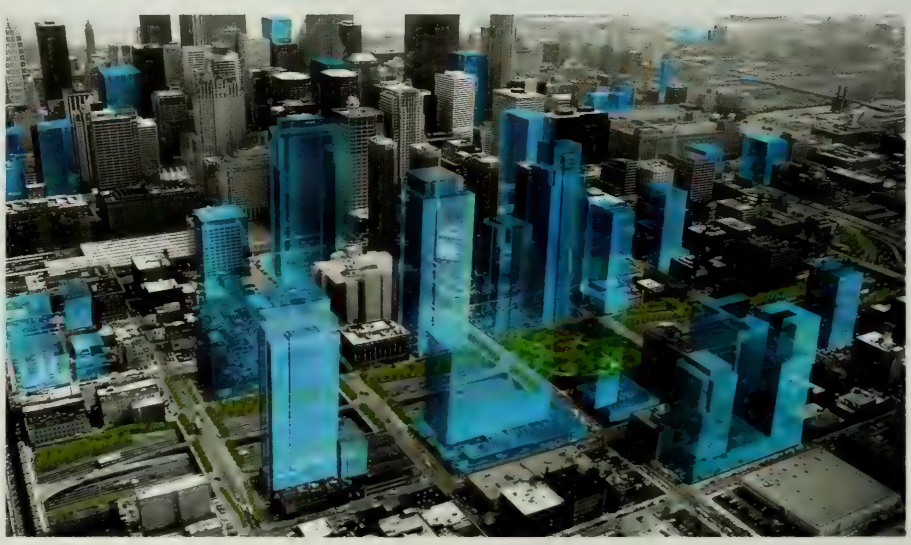
URBAN DESIGN

Perhaps the least glamorous of the AIA Honor Award–winning projects are those for urban design. But what they lack in swagger, they possess in importance—without planning, architecture becomes vacant of contextual meaning. The jury sought and found projects combining practicality and invention; restraint and proactivity. The winning plans all demonstrate the possibility of creating compact, pedestrian-friendly, sustainable communities. Transportation also plays an important role in each of the projects, encouraging architects, clients, and communities to consider the automobile as less central to the planning effort. Jane. F. Kolleeny

1. Chicago Central Area Plan
Chicago
Architect: *Skidmore, Owings & Merrill*

Chicago's downtown area experienced tremendous growth in the 1990s, with businesses prospering, residential neighborhoods emerging, and tourism flourishing. Along with success comes the need to ask new questions about density, amenities, transportation, buildings, and jobs. SOM's plan addresses these issues, strengthening the downtown economy, improving and extending the transit systems, increasing open spaces and parks, creating new waterfronts areas, and encouraging new mixed-use neighborhoods.

"This project reveals an understanding of the city as a growing organism."





2. Mission Bay Redevelopment Plan
San Francisco
Architect: *Johnson Fain*

This 303-acre area, the largest undeveloped site in the city, establishes a new neighborhood along the bay adjacent to downtown. Former plans failed to address the real needs of the city. The beauty of this one is that it incorporates Mission Bay into the structure of San Francisco, seamlessly extending its physical, economic, aesthetic, and cultural life. Creating a mixed-use neighborhood of housing, retail, entertainment, and commercial-industrial properties, the plan integrates the site into the historic fabric of the city.

"Urbanistically, the plan relates to the city as a whole, establishing it's own grid and carrying it forward clearly."



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3. UrbanRiver Vision
Worcester, Mass.
Architect: *Goody, Clancy & Associates*

In an attempt to respond to the decaying waterfronts in many of the cities of Massachusetts, a state agency created and funded a program to provide local riverfront planning, with the input of key federal, state, and local agencies. This project addresses environmental, economic, residential, transportation, and preservation issues, so all the cities have the tools they need to address their historic waterfronts and the adjacent downtown development areas.



"Fifty years ago, the river was viewed as undesirable, but now it's seen as the center of the community."



4. Getting It Right: Preventing Sprawl in Coyote Valley
San Jose, Calif.
Architect: *WRT/Solomon E.T.C.*

Coyote Valley consists of 6,800 acres of prime farmland and watershed on the southern edge of San Jose targeted for future commercial and residential development. An environmental advocacy group contracted this plan to show how the city can accommodate projected growth in a manner that sustains its urban economy, community, and infrastructure, promoting an alternative to sprawl.

"They took a complex problem, disassembled it, and then reassembled it with great results."

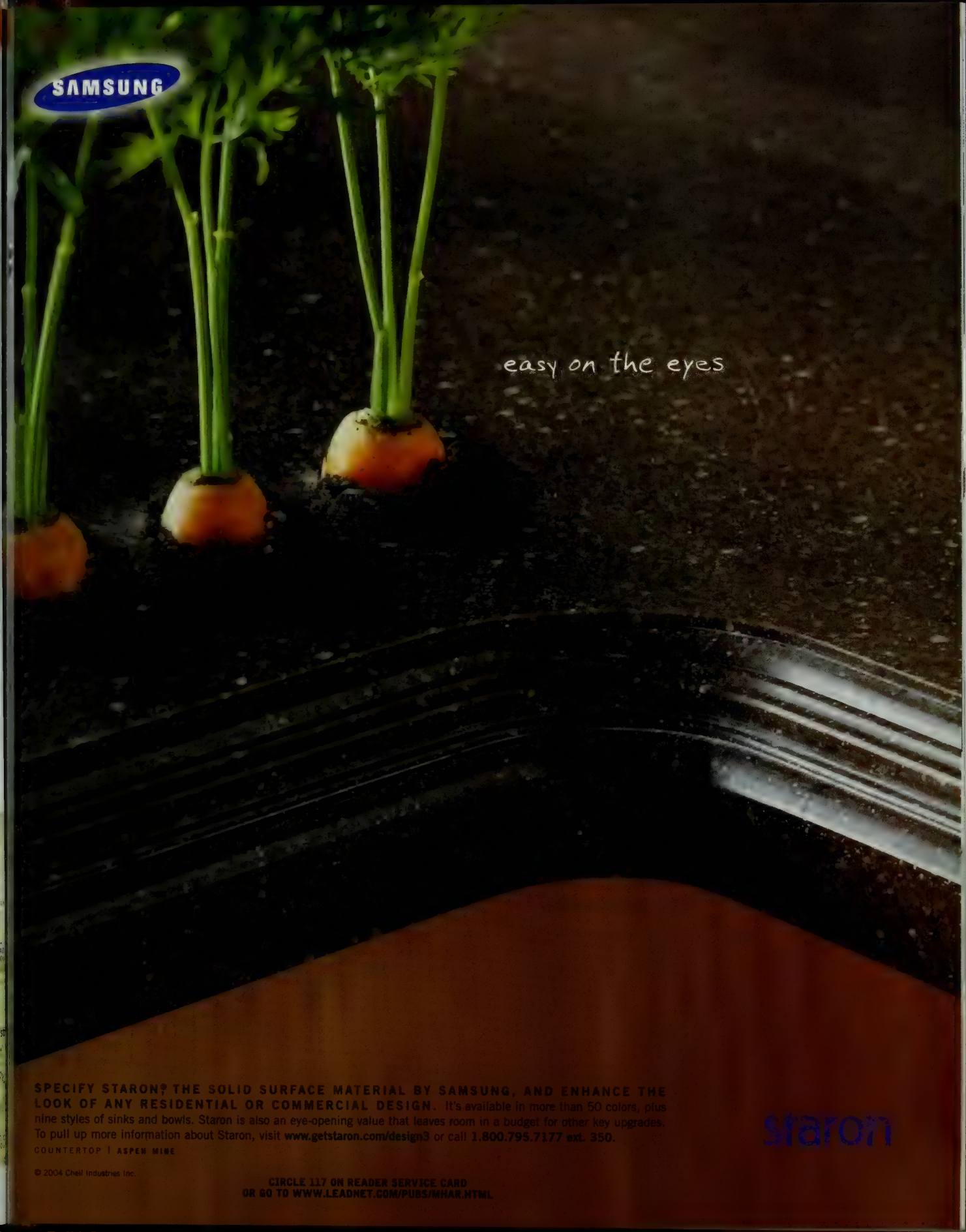
5. The Confluence: A Conservation, Heritage, and Recreation Corridor
St. Louis
Architect: *HOK Planning Group*

This plan creates a 40-mile-long conservation and recreation corridor that reinforces the confluence of the Missouri and Mississippi Rivers, one of the world's largest systems. It links St. Louis and other nearby communities to the rivers from which they rose, creating an industry of sustainable ecotourism and providing a plan for comprehensive growth in the future.

"A nationally significant park will serve as a lasting legacy to the region and to Lewis and Clark."







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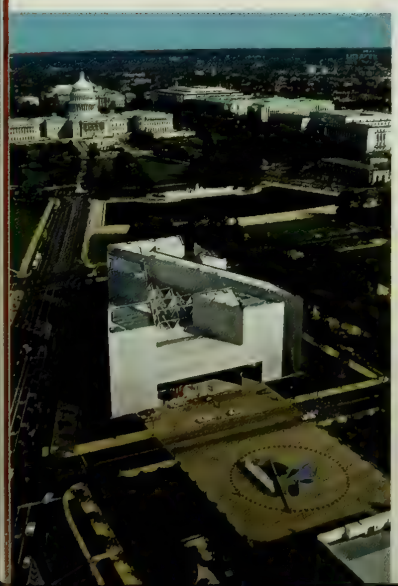
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25 YEAR AWARD



Modern masterpiece on the Mall



It's not easy being Modern on the National Mall, especially next to John Russell Pope's 1941 West Building of the National Gallery of Art—considered by I.M. Pei to be an exemplar of Neoclassicism. Transforming its proportions and materials into a contemporary idiom for an expansion was a stunning achievement for Pei and a gift to Washington and the nation. Ada Louise Huxtable cried "elitist" when the East Building opened, but she got it wrong. It's our capital city's Modern masterpiece—as powerful an achievement of the 20th century as the artwork it celebrates.

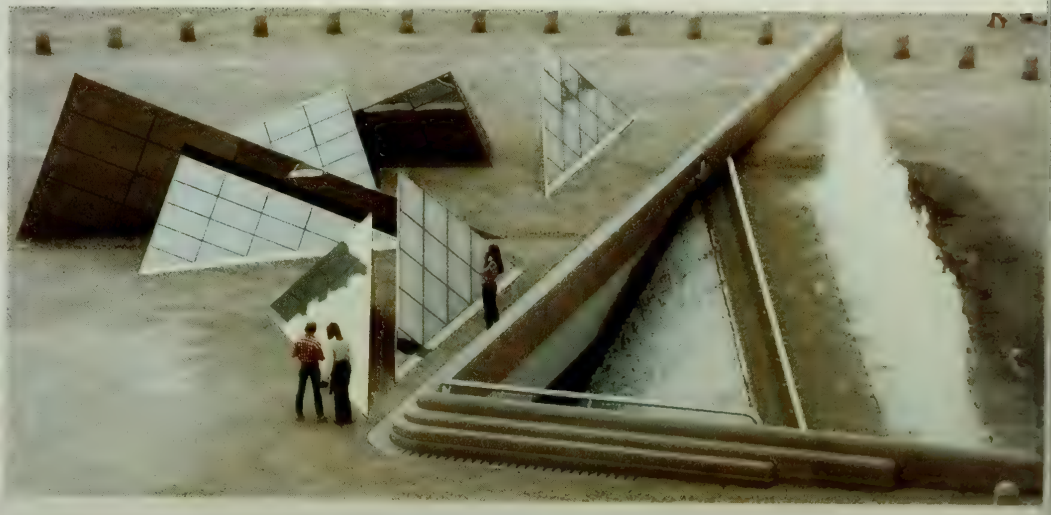
In the 26 years since President Jimmy Carter dedicated it, the East Building has thrived as an art museum while growing into eminence as an elegant, refined example of Modernism. The dual triangles, nestled within the trapezoidal site, remain programmatically intact—one for exhibitions, one for administration and research—and, unlike critics initially feared, the gallery spaces have proved highly flexible, says Victoria Newhouse, author of the forthcoming *Art/Power/Placement* (Monacelli Press). The airy atrium ("one of the most resplendent rooms of all time," RECORD noted in 1978) enjoys instant recognition, with its tetrahedron skylights that echo the geometry of the architecture, as well as Alexander Calder's colorful mobile spinning slowly overhead.

Sometimes a blemish connotes reverence. The permanent ring of discoloration surrounding Pei's name on a marble wall in the atrium owes its existence to the millions of visitors who have touched the inscription, says the NGA's director, Earl A. Powell III. The tinged stone makes explicit how indelibly Pei's identity is entwined with this well-loved project. *Deborah Snoonian, P.E.*



"This icon of contemporary architecture in a city of traditional monuments continues to delight and impress visitors from all over the world."





American Institute of Architects

Winners and Jurors 2004

WINNERS

Architecture (page 140)

Seaside Interfaith Chapel: *Merrill and Pastor Architects;* **The Brain:** *Olson Sundberg Kundig Allen Architects;* **The Point House:** *Bohlin Cywinski Jackson;* **Chicken Point Cabin:** *Olson Sundberg Kundig Allen Architects;* **Center of Gravity Foundation Hall:** *Predock_Frane Architects;* **Northeastern University West Campus Residence Halls:** *William Rawn Associates;* **Steelcase - Project MAC:** *Thomas Phifer and Partners;* **Salt Lake City Public Library:** *Moshe Safdie and Associates;* **DoMa Gallery:** *W Architecture and Landscape Architecture;* **Taghkanic House:** *Thomas Phifer and Partners;* **Los Angeles Design Center and Cisco Brothers Showroom:** *John Friedman Alice Kimm Architects;* **Deutsche Post:** *Murphy/Jahn;* **Telenor Headquarters:** *NBBJ/HUS/PKA;* **Skybridge at One North Halsted:** *Perkins & Will;* **State Street Village, ITT:** *Murphy/Jahn;* **Bayer:** *Murphy/Jahn*

Interiors (page 160)

Carol and Carl Montante Cultural Center: *Cannon Design;* **Pallotta TeamWorks New Headquarters:** *Clive Wilkinson Architects;* **New York City Public School 42, Queens, Library:** *Weiss/Manfredi Architects;* **First Presbyterian Church of Encino:** *Trevor Abramson, Abramson Teiger Architects;* **NAI Exhibition - *Silent Collisions*: Morphosis Retrospective:** *Morphosis;* **Academic Center for Student Athletes at Louisiana State University:** *Trahan Architects;* **American Meteorological Society Editorial Offices:** *Anmahian Winton Architects;* **COop Editorial:** *Pugh + Scarpa*

Urban Design (page 168)

Chicago Central Area Plan: *Skidmore, Owings & Merrill;* **Mission Bay Redevelopment Plan:** *Johnson Fain;* **UrbanRiver Vision:** *Goody, Clancy & Associates;* **Getting It Right: Preventing Sprawl in Coyote Valley:** *WRT/Solomon E.T.C.;* **The Confluence: A Conservation, Heritage, and Recreation Corridor:** *HOK Planning Group*

25-Year Award (page 172)

National Gallery of Art - East Building, Washington, D.C.: *I.M. Pei*

Firm of the Year (page 176)

Lake/Flato Architects: *David Lake, FAIA, and Ted Flato, FAIA*

Gold Medal (page 184)

Samuel Mockbee, FAIA

JURORS

Architecture

Adrian Smith, FAIA (Chair), Chicago; Seth N. Cohen, Assoc. AIA, Philadelphia; Steve Dumez, AIA, New Orleans; Rand Elliott, FAIA, Oklahoma City; Roberta W. Jorgensen, FAIA, Newport Beach, Calif.; Robert D. Loversidge, Jr., FAIA, Columbus, Ohio; Cheryl McAfee, FAIA, Fayetteville, Ga.; Sarah Peden, Washington, D.C.; David Thurm, New York City

Interiors

Lee Mindel, FAIA (Chair), New York City; Annie Chu, AIA, Los Angeles; Sarah Grant-Hutchison, Des Moines; Mary L. Oehrlein, FAIA, Washington, D.C.; Arthur Smith, FAIA, Southfield, Mich.

Regional and Urban Design

Ray L. Gindroz, FAIA (Chair), Pittsburgh; George Crandall, FAIA, Portland, Ore.; Wendy Evans Joseph, FAIA, New York City; Elizabeth Chu Richter, AIA, Corpus Christi, Tex.; Susan Williams, Indianapolis



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ARCHITECTURE FIRM AWARD

LAKE | FLATO'S desert architecture partners seamlessly with nature

This Texas firm blends Modernism, regionalism, and sustainability to create architecture that responds to the sun, the shade, and the breezes, collaborating successfully among themselves in the process.

By David Dillon



From left: Ted Flato, David Lake (seated); Kim Monroe, Greg Papay, John Grable, Karla Greer, Bob Harris, and Matt Morris (standing).

David Lake, FAIA, once described himself as a romantic and his partner, Ted Flato, FAIA, as a rationalist. "I prefer eccentricity, and he doesn't," he explained, to which Flato replied that he had "a great fear of doing something trendy that I won't like after 10 years."

Lake/Flato Architects of San Antonio, winner of this year's American Institute of Architects Firm Award, celebrates its 20th year. That delicate balance between reason and romance, tradition and invention is intact.

The architects remain physically and imaginatively attached to Texas by virtue of what the late William Turnbull called their "specifically Texas insights," meaning responsiveness to the imperatives of sun, heat, and wind, the challenges of a vast landscape, and the richness of local building traditions.

"We believe in an organic architecture that springs from its place," says Lake, "one that acknowledges precedent and that solves basic problems simply and elegantly. I think that's what Bill was getting at. Architecture should be comfortable and easy to live with, rather than just eye candy."

From a familiar and unapologetically romantic base of barns, silos, stone walls, and metal roofs, their work has grown steadily more refined and abstract in ways that show how to make Modernism come to terms with history without lapsing into empty nostalgia.

In the late 1970s, Lake and Flato went to work for O'Neil Ford, the master of midcentury Texas Modernism, who taught them the importance of materials and construction, of knowing how things go together instead of how to make arbitrary shapes. "Architecture isn't sculpture," he'd preach.

Contributing editor David Dillon is the architecture critic for The Dallas Morning News.



La Estrella Ranch House,
Roma, Texas, 1989

Carraro Residence
Kyle, Texas, 1990

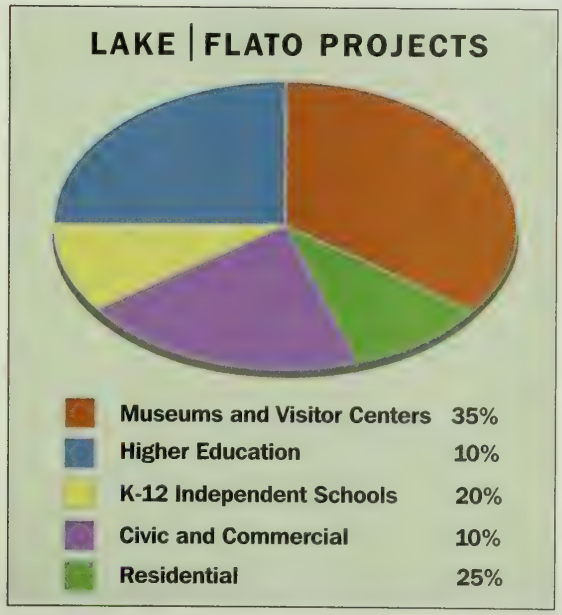


Consequently, instead of theorizing, Lake/Flato builds, or perhaps one could say they build based on theories about earth instead of air. Like their mentor's, their houses, schools, and churches are intensely sensory and tactile; the first impulse on entering them is to run your hands across walls and doors, to read the architecture through the pores.

Lake started out designing Modern sodbuster houses in the Texas Panhandle, followed by adobe houses in northern New Mexico that evoke dense historic prototypes while remaining remarkably open and bright. In the 1980s, he and Flato teamed up on a series of evocative ranch houses, mostly in South Texas, that combine simple forms and homely materials—corrugated metal, oil-field pipe, cattle fencing—to create culturally and climatically appropriate designs. The individual pieces typically form courtyards with big porches and deep overhangs that offer protection from parching Texas sun and wind.

Attractive, appropriate, skillfully detailed, yet not enough to justify the Architecture Firm Award. The breakthrough came in 1990 with the Carraro residence outside Austin, an abstracted, almost skeletal version of a Texas farmhouse that uses steel salvaged from an abandoned cement plant to create a series of light, airy pavilions for living and entertaining.

"The client had this very romantic notion of a stone barn out in a field, with an old Butler building as the frame," recalls Flato. "We didn't want to get involved with that, so we convinced them to buy this 40-by-180-foot shed and break it into three pieces, with a little stone cube in one for the living quarters. It was a case of using the limitations of budget and the original idea to create a more interesting project."



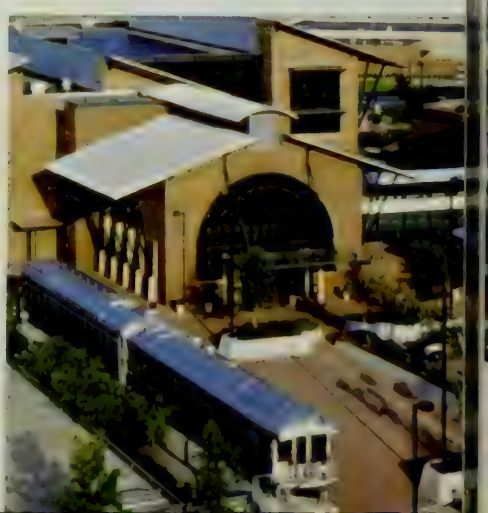
This combination of light steel frame and heavy stone appears frequently in Lake/Flato's later work, giving the reason/romance paradigm a new tension and edginess. The Carraro house won an AIA National Honor Award, the first of three, and dramatically elevated the firm's profile.



Lasater Residence
Fort Worth, 1994



Great Northwest Branch Library
San Antonio, 1994



Burlington Northern Santa Fe Railroad Headquarters
(with KVG Gideon Toal)
Fort Worth, 1996



Burlington Northern Santa Fe Railroad Headquarters
Fort Worth, 1996



Texas State Cemetery
Austin, Texas, 1997

Air Barns
San Saba, Texas, 1999



Lake/Flato now employs 45 people, half of them architects, who collaborate as a matter of course. This is another gift from Ford, who gave young designers extraordinary freedom and also surrounded them with a repertory company of craftsmen—masons, weavers, furniture makers, ceramicists—who softened and enriched his special brand of Modernism. The difference between real collaboration and a facsimile is the difference between bringing a covered dish to the supper and cooking together. Lake/Flato cook together.

They also get out of the studio to teach, lecture, and serve on design juries. They sponsor a residency program at the University of Texas at San Antonio and have helped the city's mayor come up with a Smart Growth Plan. A belief in good design as a public responsibility as well as a private passion lies at the heart of their practice. As the firm has expanded, so has the range and complexity of its projects. In the past decade, Lake/Flato has designed museums, churches, libraries, and corporate headquarters, along with a cemetery, a botanical garden, and a school of nursing.

"THE FIRST IMPULSE ON ENTERING THEIR HOUSES, SCHOOLS, AND CHURCHES IS TO RUN YOUR HANDS ACROSS WALLS AND DOORS."

Scale remains their ally and occasionally their albatross. The sprawling Burlington Northern Santa Fe headquarters in Fort Worth (with KVG Gideon Toal), for example, gets a bit heavy-handed in its evocation of the railroad vernacular. Likewise, the SBC Center, home of the San Antonio Spurs basketball team, is festooned with structural Texana that comes across as forced rather than inevitable. Understatement is their game.

Considerably more successful is the Trammell Crow Visitor Pavilion at the Dallas Arboretum, which opened in 2003 and in many respects epitomizes their earlier work. Here, rugged Texas limestone walls meet light steel and glass pavilions to form a small village with an open central plaza. The pavilions are contemporary abstractions of traditional barns and sheds, their appeal residing in the intimate scale and honest craftsmanship, rather than in bold architectural gestures. And the entire project blends seamlessly with its natural surroundings, enhancing rather than overwhelming them.

The new University of Texas School of Nursing in Houston is Lake/Flato's most ambitious exercise yet in sustainable design. Using 50 percent recycled materials and consuming 40 percent less energy, the building attains a LEED Gold rating without compromising architectural integrity or turning technology into a fetish.

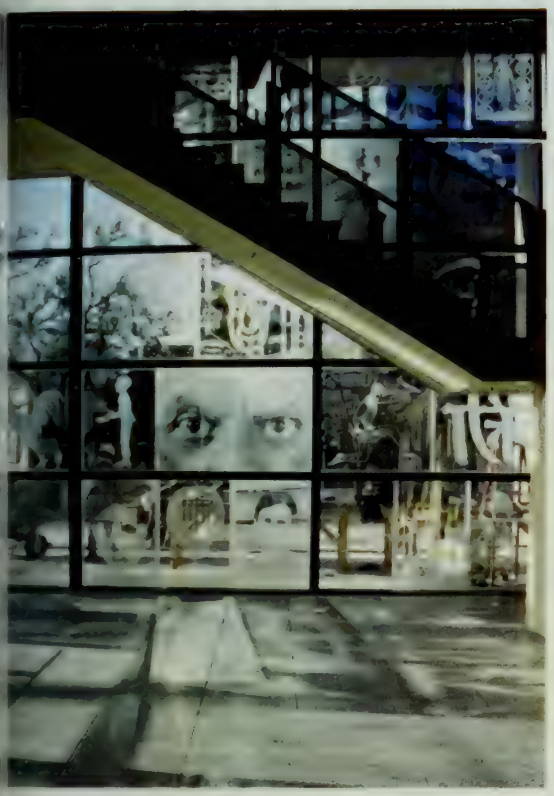
Economy, pragmatism, simplicity, comfort without pretension, elegance without irony, these features distinguish Lake/Flato's best work. Their architecture shows respect for materials and construction, for the values of place and precedent and the needs and aspirations of its users. ■



Hotel San Jose
Austin, Texas, 2000

Agudas Achim Synagogue
Austin, Texas, 2001





Harry Ransom Center
Austin, Texas, 2003



University of Texas School of Nursing and Student Community Center
Houston, 2004

Trammell Crow Visitor Education Pavilion at the Dallas Arboretum and Botanical Society
Dallas, 2000





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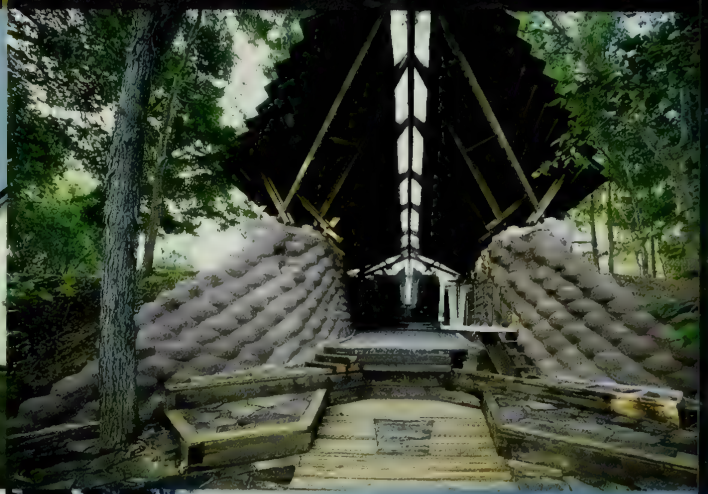
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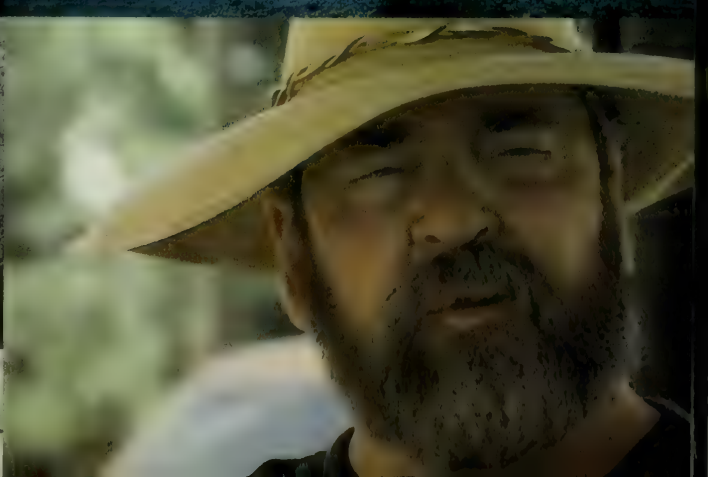




















PHOTOGRAPHY: MOCKBEE PORTRAITS COURTESY JEFF ETHERIDGE

Samuel Mockbee: A life's work

AIA GOLD MEDAL WINNER

Before there was a Rural Studio, there was an architect named Sambo. He grew up in the heady milieu of Mississippi, a place redolent of earth and growing things, of social disparity, and great literature. Coming of age during the contentious 1960s, Sambo absorbed the world surrounding Meridian, Mississippi, played football, attended Auburn University, and joined the army. Then his worldview shifted.

After a stint working in Georgia, he returned to Mississippi, where, in conjunction with a series of partners, he began to make architecture suited to the geography and culture of the nation's poorest state. Using the simplest materials and familiar forms, he wrested newness from a people struggling to emerge from a rich but historically oppressive past. Great writers from William Faulkner to Walker Percy had succeeded in moving on; uniquely, Sambo took architecture to a new Southern frontier.

While early projects smacked of Postmodernism, very quickly a bevy of buildings, from houses to simple chapels, proclaimed a refreshed, empathetic sensibility. Soon Sambo & Company were redefining what it meant to live and work in the South. Publications took notice, as did the universities.

Ultimately, he found his full voice through other people, particularly at Auburn's Rural Studio, where he and collaborator D.K. Ruth cofounded a residential architectural program that offered a total immersion in the art of building, engaging all of the arts in the service of a specific community. That work continues to flourish to this day.

In naming Mockbee as the 2004 Gold Medalist, the American Institute of Architects not only recognized his gifts, but also espoused Sambo's values, which fiercely and unsentimentally addressed basic human needs. *Robert Ivy, FAIA*



A 1927 Neoclassical service station called the Shady Nook, in Jackson, Miss., became the first office of Goodman and Mockbee, 1979. Mockbee is pictured with contractors; he's in the middle in a sports jacket.

By Andrea Oppenheimer Dean

Both Samuel Mockbee and Frank Lloyd Wright often tongue-lashed their profession. Wright once called architects "high-grade salesmen"; Mockbee labeled them "house pets to the rich." Yet the American architectural establishment conferred its highest honor, the AIA Gold Medal, on both Wright and Mockbee. That's not all they had in common: Both were charismatic teachers who pried open the minds of their students with evocative stories and practical lessons instead of dry theory. Wright spoke of Taliesin in Wisconsin as having "simply shaken itself out of my sleeve." Mockbee told his students at the Rural Studio in southwest Alabama—often called Redneck Taliesin—"screw the theory; choose the more beautiful."

But the comparison pretty much ends there. Wright, a surpassing egotist, saw himself as the Welch magician and bard Taliesin and gathered apprentices in rural Wisconsin for his own greater good. Mockbee, humble and unassuming, wanted to do good for others. Wright was domineering, while Mockbee applied a light touch, cautioning students that goodness was more important than greatness, compassion more eventful than passion. Wright was the elegant, autocratic Mr. Wright. Mockbee, a bearish, bearded, sixth-generation Mississippian, was an egalitarian and a populist who preferred being called Sambo and drove around Hale

Andrea Oppenheimer Dean is a RECORD *contributing editor and author with Timothy Hursley of* Rural Studio: Samuel Mockbee and an Architecture of Decency *(2002).*

THE EARLY WORK 1970–1980s



1



2

1. Christ Community Church, Clinton, Miss., Goodman and Mockbee, 1979.

2. Presidential Hills Presbyterian Church, Jackson, Miss., Goodman and Mockbee, 1980.

3. Model of Charity Houses, Madison County, Miss., P/A Award submission, Mockbee Coker Howorth Architects, 1986–87 (not built).

4. Model of the Flautt House, Greenwood, Miss., Mockbee Coker Howorth Architects, 1987 (not built).

3



4



County, the Rural Studio's home, in a beat-up red pickup, wearing old clothes and an Auburn University baseball cap. He viewed himself as an iconoclast and a subversive. The same, of course, was true of Wright.

Mockbee was convinced that "everyone, rich or poor, deserves a shelter for the soul" and that architects should lead in procuring social and environmental change. But he believed they had lost their moral compass. The profession needed reform, he believed, and education was the place to start. "If architecture is going to nudge, cajole, and inspire a community to challenge the status quo into making responsible changes, it will take the subversive leadership of academics and practitioners who keep reminding students of the profession's responsibilities," he said. He wanted to get students away from the academic classroom into what he called the classroom of the community.

MOCKBEE OFTEN TONGUE-LASHED THE PROFESSION, LABELING ARCHITECTS "HOUSE PETS TO THE RICH."

In a letter nominating Mockbee for the 2004 Gold Medal, Frank Gehry, FAIA, wrote, "There have been few programs as radical as the Rural Studio in helping students to believe in their role for the future." Peter Eisenman, FAIA, commended the studio for stressing "the ethical dimension of building." Michael Rotondi, FAIA, wrote, "Mockbee represents all that we aspire to be as individuals and as a profession."



Sambo teaching at the Rural Studio in Greensboro, Ala., 2000.



5

5. Tractor shed at Flautt House, Greenwood, Miss., Mockbee Coker Howorth Architects, 1988.

6. McGee Church, McGee, Miss., Mockbee Coker Howorth Architects, 1989.

7. National Center for Physical Acoustics, University of Mississippi, Ole, Miss., Mockbee Coker Howorth Architects, with HLW, 1989.

6





7



Traveling exhibition, Soviet Union, joint venture of Mockbee Coker Howorth Architects and Communication Arts, 1988–1991.

Mockbee's ideas and his aesthetic evolved while he was in private practice, first in a partnership he formed with Thomas Goodman in 1977, then with Coleman Coker in 1983. He described his architecture as contemporary Modernism grounded in Southern culture and drew inspiration from such vernacular sources as overhanging galvanized roofs, rusting metal trailers, dogtrot forms, and porches. "I'm drawn to anything that has a quirkiness to it, a mystery to it," Mockbee said. His designs tended toward asymmetry and idiosyncrasy, as seen, for example, in his Madison County, Mississippi, Barton House (a 1992 Record Houses Award winner) and his Oxford, Mississippi, Cook House (a 1995 AIA National Honor Award winner).

MOCKBEE, A BEARISH, BEARDED, SIXTH-GENERATION MISSISSIPPIAN, DROVE IN A BEAT-UP RED PICKUP.

By the early 1980s, convinced that addressing problems and trying to correct them is "the role an artist or architect should play," Mockbee sought opportunities to follow Leon Battista Alberti's injunction that the architect must "choose between fortune and virtue." In 1982, he helped a Catholic nun move and renovate condemned houses in Madison County, Mississippi, and then built his first "charity house" there for $7,000, using donated and salvaged materials and volunteer labor—a model for the Rural Studio. In 1987, his firm won a 1982 P/A Award for

1988–1991



8

8. Cook House, Oxford, Miss., Mockbee Coker Howorth Architects, 1991.

9. Barton House, Mockbee Coker Howorth Architects, Madison County, Miss., 1991.





9

three prototype dogtrot-type charity houses but was unable to get a construction grant to build them. Hoping to convey to possible patrons the reality of poor people ("like you and me, only poor"), Mockbee painted strong portraits in oil of some of his indigent clients. The final piece for the Rural Studio fell into place in 1990 when Mockbee visited Clemson University's architecture program in Genoa, Italy.

In 1992, Mockbee, together with Auburn architecture professor D.K. Ruth, founded the Rural Studio, which Mockbee directed until his death in late 2001. But instead of planting Auburn's study-abroad program in a foreign country, they rooted it in the hollows and flat fields of Alabama's second-poorest county, Hale. Mockbee was drawn there partly because of the poverty: The residents obviously needed help, and coming to Hale would force students to test their abstract notions about poverty by "crossing over into that other world, smelling it, feeling it, experiencing it," he said. He was also attracted by the isolation, which, combined with Mockbee's prohibition of television, would concentrate students' minds on their building projects. Students would also be exposed to the region's architectural history, read its literary giants, and absorb Mockbee's lectures on responsibility, fairness, and decency.

Each semester, the Rural Studio brought about 15 second-year students to Hale County to help design and build a house. Fifth-year students stayed for a year, working on a community building, their thesis project. Two years before



Sambo working on the tractor shed, Flautt House, Greenwood, Miss., Mockbee Coker Howorth Architects, 1988.



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10. Bryant (Hay Bale) House, Mason's Bend, Ala., Rural Studio, 1994.



Sambo with the Harris family, Mason's Bend, Ala., Rural Studio, 1997.

Mockbee's death, the studio launched an outreach program, accepting a handful of students from other universities and other disciplines to undertake a variety of design and social-work assignments.

Mockbee's Rural Studio represented a vision of architecture that embraced not only practical architectural education and social welfare but also the use of salvaged, recycled, and curious materials and an aesthetics of place. "I want to be over the edge, environmentally, aesthetically, and technically," Mockbee said. His students used hay bales to build walls for the studio's first house, worn-out tires for the walls of a chapel, salvaged Chevy Caprice windshields for the roof of a community center, and waste corrugated cardboard for a one-room dwelling. Transmuting ordinary materials into extraordinary objects, the studio's buildings were obvious relatives of those Mockbee designed for his private clients.

For his work at the Rural Studio, Sambo Mockbee was awarded the National Building Museum's first Apgar Award for Excellence in 1998, and in 2000, he won a MacArthur "genius" grant.

The influence of the Rural Studio is hard to quantify. Daniel Friedman, FAIA, dean of the University of Illinois, Chicago's architecture program, says it has changed architectural education. Bill Carpenter, author of *Learning by Building: Design and Construction in Architectural Education*, observes that in 1992 there were eight or 10 university-based design-build programs, while today there are 30 or 40. He says, "a lot of it [the increase] had to do with Sambo." The

1990–2001



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11. Yancey Chapel, Sawyerville, Hale County, Ala., Rural Studio, 1995.

12. House on Tennessee River, Shiloh Falls, Tenn., Mockbee/Coker Architects, 1997.

charismatic Mockbee and his Rural Studio were featured on network television, including *CBS This Morning* and in numerous national magazines. "It was the first time the public was captivated by an architectural model," Carpenter says.

MOCKBEE TOLD HIS STUDENTS, "SCREW THE THEORY; CHOOSE THE MORE BEAUTIFUL."

Another influence, he says, is graduates—about 450 by now. Many become purveyors of the Rural Studio's approach.

After a founder's death, ventures like the Rural Studio rarely flourish. Much of Taliesin's vitality and creativity, for instance, died with Wright.

I am pleased to report, however, that Mockbee's baby thrives, a tribute to his ideas. The studio isn't quite the same and isn't without criticism, including from within. "I suspect Sambo would just think it was different and regret being dead and not being there," David Buege, a professor of architecture at Mississippi State University and a friend of Mockbee's, told me. Mockbee understood change and welcomed it. He created the studio as a moving target.

There was almost no transition period, Buege recalls, and there was never a doubt about who should succeed Mockbee. At the time of Mockbee's death, 34-year-old Andrew Freear, a native of Yorkshire, England, and a product of London's Architectural Association, taught the fifth-year program. "Sambo and I were good together," Freear says. "I was a



Interior of Harris (Butterfly) House, Mason's Bend, Ala., Rural Studio 1997.



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13. Harris (Butterfly) House, Mason's Bend, Ala., Rural Studio, 1997.

14. Hero Children's Center, Greensboro, Hale County, Ala., Rural Studio, 1999.



Detail of one of the Pods (note wall made of license plates), Newbern, Ala., Rural Studio. 1997–2001.

sort of utilitarian socialist and he was the artist who said make it pretty."

Freear was the obvious successor—the only person, really, who could take over. The studio formed ranks behind him, and Freear carried on, adopting one of Mockbee's slogans, "Proceed and Be Bold."

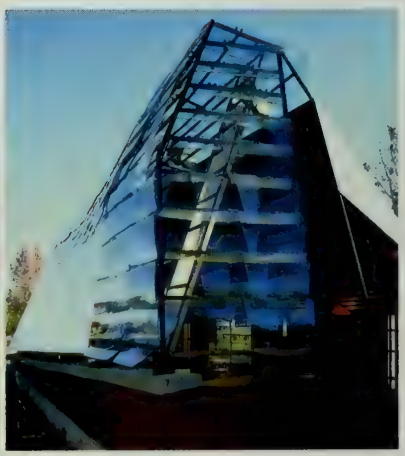
Freear is "a bulldog," says Buege. "Andrew is smart, brash, ambitious, always on the edge, often over-the-top, disciplined, deeply committed, self-confident. Someone without that confidence might well have failed. He's very respectful of Sambo and his legacy, but he's assertive about not being Sambo and the Rural Studio being more than Sambo."

David Hinson, an Auburn associate professor of architecture, adds that Freear has many of the same strengths as Mockbee: Freear lets students realize themselves, has a pragmatism combined with poetry, doesn't entertain long discussions grounded in abstractions, is kind, and has a penchant for the outrageous. Shortly after Mockbee's death, Auburn committed $400,000 a year to the studio, endowing it with stability for the first time, and in 2002, Freear was appointed codirector of the studio, with Bruce Lindsey, head of Auburn's School of Architecture. Freear, however, continues a laser concentration on fifth-year projects, and during his watch

THE INFLUENCE OF THE RURAL STUDIO HAS CHANGED ARCHITECTURAL EDUCATION.

1997–2002





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15. Mason's Bend Community Center, Mason's Bend, Ala., Rural Studio, 2000.

16. Supershed and Pods (left, interior of Cardboard House), Newbern, Ala., Rural Studio, 1997–2001.

the studio's focus has shifted more emphatically from the rural house to community-oriented buildings.

At the same time, the Rural Studio's community buildings have grown larger, more complex, more socially significant, and more numerous. During the early years, students built one house and, at most, two modest community buildings a year. In the two years following Mockbee's death, the studio completed 17 projects. Lindsey thinks that tackling so many assignments at once might have been "a bit of therapy for dealing with the loss of Sambo." Perhaps Freear, new and young, needed to prove something about the studio without Mockbee, and about himself.

The year Mockbee died, the studio was working on a house plus five community projects: the Antioch Baptist Church in the countryside about 25 miles northeast of Newbern, the studio's base; a senior center in Akron, 25 miles west of Newbern; a storefront in downtown Greensboro, the county seat; and in Perry County, Hale's neighbor to the west, the studio completed a pavilion in the newly reopened Perry Lakes Park. In addition, a group of outreach students reinterpreted and built one of Mockbee's last designs, called Lucy's House for its owner.

Freear says that if the Rural Studio has changed, "it's because I said we can make the craft better. I want to have high expectations for the students and the client. If we're going to make a glass box [as at the Thomaston Rural Heritage Center], the finish is going to be fantastic." Freear has also honed the



Lucy and Anderson Harris (standing) and son A.J. (seated) at Lucy's House, Mason's Bend, Ala., Rural Studio, 2002.









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17. Lucy's House, Mason's Bend, Ala. (note walls made of carpet samples), Rural Studio, designed 2001, completed in 2002 (after Mockbee's death).



Mockbee in his painting studio in Newbern in the summer of 2001 seated before *The Children of Eutaw Pose Before Their Ancient Cabins*, 1992.

programming of buildings and has encouraged communities to find their own funding, believing that if they provide payment they are more likely to take ownership. Fifth-year students once chose their own projects, but now community leaders come to the studio seeking design and construction help. As a result, students have become more engaged with town and county leaders.

"I'M DRAWN TO ANYTHING THAT HAS A QUIRKINESS TO IT, A MYSTERY TO IT," MOCKBEE SAID.

Freear's stress on craftsmanship has led him away from Mockbee's tendency toward improvisation and letting design evolve during construction. Freear insists on getting things right first. Drawing, he says, saves time on-site and creates better communication among team members and between the team and the client. "Design-build should not be a series of responses to screwups made earlier in the project," he says. "I believe in precision, not artfully camouflaged sloppiness." But ratcheting up the level of craft has stretched out schedules. At the end of the academic year 2002–2003, three of four thesis projects remained unfinished; that summer and fall graduates returned to finish their work, on their own penny.

Another change, since 2001, has been increased use of steel in construction. John Forney, the outreach program professor, worries that the students may lose out, because steel requires

2002–Present



18



18. Music Man's House (Jimmy Lee Matthews), Greensboro, Hale County, Ala., 2002–2003.



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Red Barn, Newbern Design Studio, where Rural Studio currently works, Newbern, Ala., Rural Studio, 2004.

fabrication by professionals. The problem solved itself: In 2004, students rejected the steel and glass of the past two years. "The students don't want to do something that's already been done, and they saw how much of the construction process was taken out of their hands last year and the year before," Freear says.

THE STUDENTS CROSSED A THRESHOLD TO A PREVIOUSLY FEARED AND UNFAMILIAR WORLD.

The thesis projects completed under Freear use some recycled materials, but you'll find no hay bales, no waste corrugated cardboard, no windshields. He is more interested in durable buildings that require minimal maintenance. A decline in the use of unconventional, scrappy materials would seem to go hand-in-hand with raising the bar.

As materials have changed, so has appearance. The Rural Studio's buildings under Mockbee were known for their striking angles, winged roofs, and wacky details. The new thesis projects, some of which are stunning, tend toward a more neutral, Minimal Modernism, a vocabulary that wasn't Mockbee's.

Remember, however, these are not Freear's buildings. The students react to Freear's critiques and may unconsciously absorb his preferences, but the students were always the authors, and that's still the case. Freear says he and his students engage in few conversations about how things look. "We talk about

2002–Present





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19. Antioch Baptist Church, Perry County, Ala., Rural Studio, 2002.

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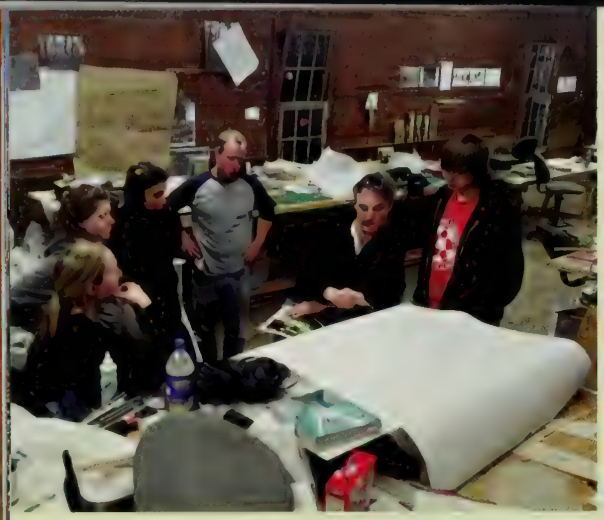
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Andrew Freer (seated) with Rural Studio thesis students. Red Barn, Newbern Design Studio, Newbern Ala., 2004.

materials and the sustainability of materials, that our clients have no money or time to paint, that we shouldn't use a metal that's going to rust."

Unlike the community buildings, which show an ever-increasing level of sophistication, the outreach program still produces projects with Mockbee-era quirkiness. One example is Cynthia Connolly's organic vegetable stand of 2003, which has movable walls of hogwire, a patchwork of chicken wire and assorted metal leftovers. John Forney, the program's instructor, has tried to avoid what he characterizes as the "death march struggles" of the fifth-year projects.

FREEAR CARRIED ON WITH THE RURAL STUDIO, ADOPTING ONE OF MOCKBEE'S SLOGANS, "PROCEED AND BE BOLD."

Mockbee's expressive yet relaxed approach also lives on in the houses designed and built by the second-year program, which has changed much less than the fifth-year program. The first house completed since Mockbee's death, Tracy Shiles's house of 2002, suffers from an overabundance of ideas, forms, materials, and finishes, but the second, completed in 2003, for Jimmy Lee Matthews, aka Music Man, returned the studio to its roots. As with the studio's first house for Shepard and Alberta Bryant, middle-class white students and an impoverished black client worked closely together. They bonded, and the students crossed a threshold to enter a previously

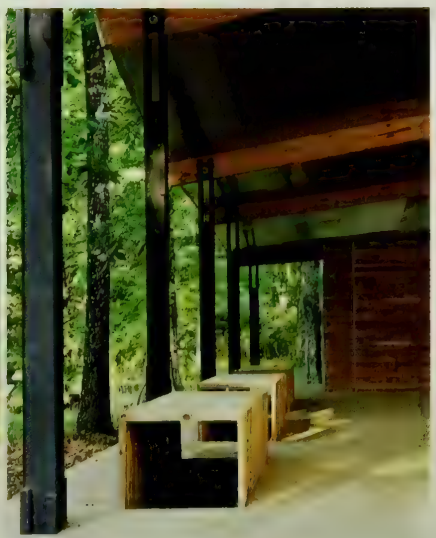
2002–Present



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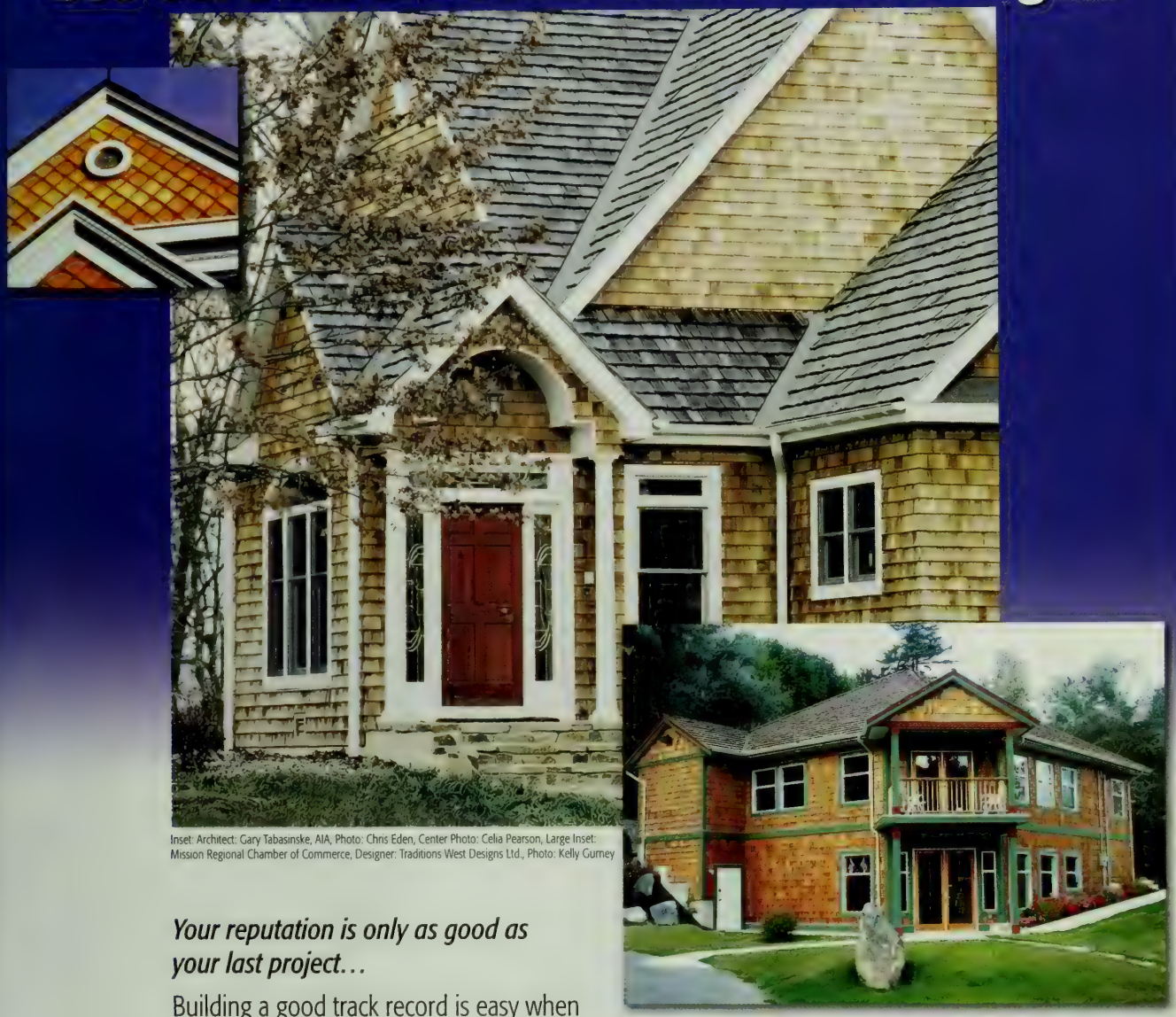
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20. Newbern Little League Field, Newbern, Hale County, Ala., Rural Studio, 2002–2003.

21. Boardwalk and Restroom Facilities, Perry Lakes Park, Perry County, Ala., Rural Studio, 2002–2003.

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Preliminary sketch: Fabrications, Hale County, Ala., 1997.

feared and unfamiliar world. The students found many of the materials—timber, chicken wire, colored bottles—for the tall, narrow, house with the big tin roof on Music Man's property. Boochie Patrick's 1,000-square-foot, modular house of 2004 was conceived as a possible replacement for the region's omnipresent housing form, the trailer. It has a steel frame with bays that can be enclosed with any material at hand, and, as at the Patrick's, can be tailored to a family's needs and the site.

MOCKBEE PAINTED PORTRAITS OF SOME OF HIS INDIGENT CLIENTS ("LIKE YOU AND ME, ONLY POOR").

The Rural Studio's accomplishments pose questions: How can the studio balance its more ambitious, big-time buildings against a wish to remain intimate and retain its rural soul? How can it maintain Sambo Mockbee's child-like sense of fun and adventure while laboring on more adult, multiyear, high-pressure projects?

Jay Sanders, the second-year instructor from 2002–2004, observes that "Sambo never had a master plan for this place. Maybe his legacy is that it will live on without him, without me, without Andrew, without the students that knew him. If it continues to move forward, in 10 years it may not feel anything like it does today."

For now, Freear and his gang proceed boldly. Sambo would love it. ■

MOCKBEE **THE ARTIST**

Clockwise, from right: *Portrait of Gayle*, 1989; *The Children of Eutaw Pose Before Their Ancient Cabins*, 1992; *The Coronation of the Virgin—1730 and 2001*, 2001; *Julius and His Mother Pose Before Their Ancient Cabin*, 1990.





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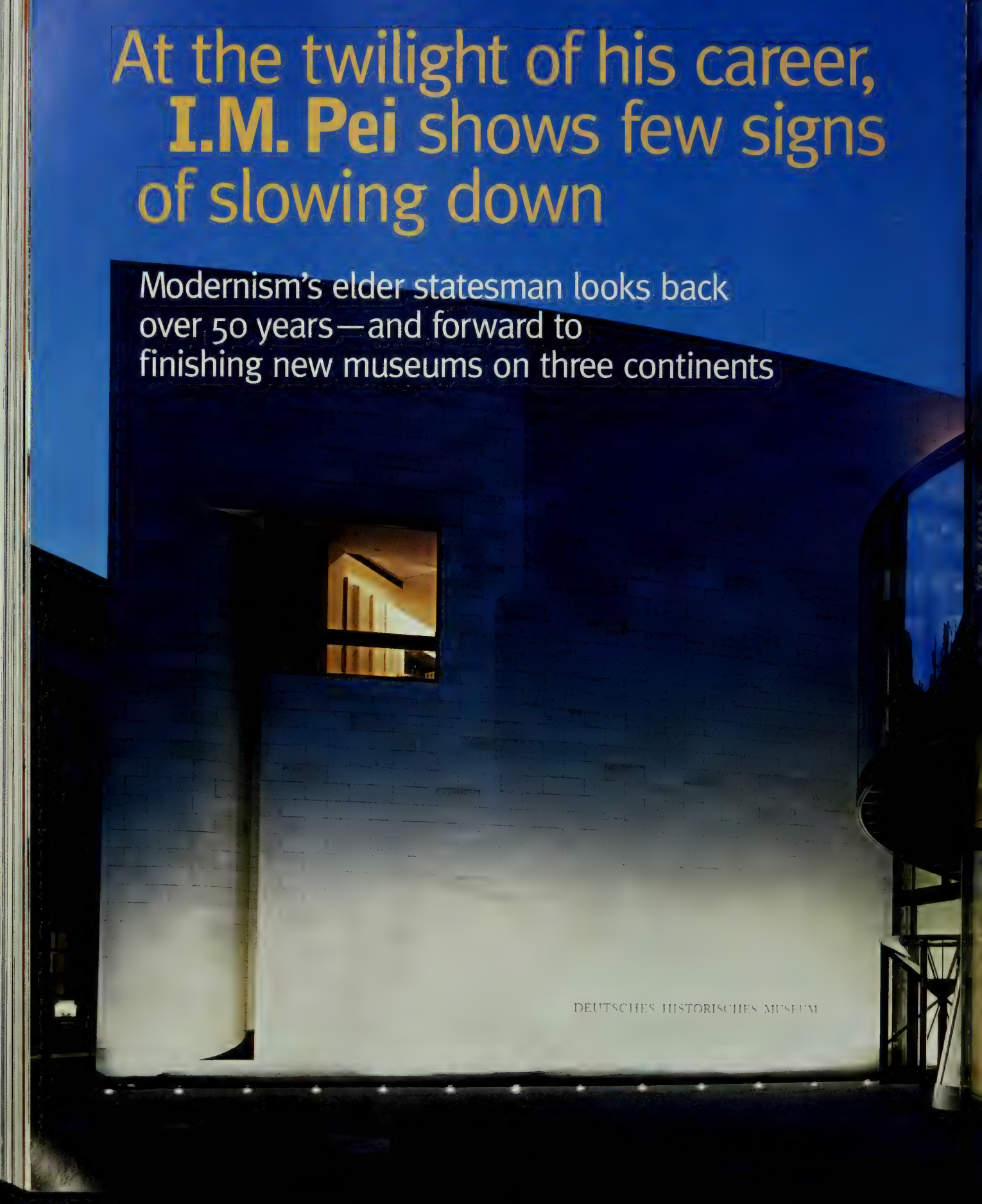
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COMPOSITES GUREA

At the twilight of his career, **I.M. Pei** shows few signs of slowing down

Modernism's elder statesman looks back over 50 years—and forward to finishing new museums on three continents





At dusk, the transparent helical staircase glows in the new wing (known as the Schauhaus) of the German Historical Museum in Berlin. Pei's addition provides some 29,000 square feet of space for temporary exhibitions.

By Robert Ivy, FAIA

I.M. Pei's agility with the Modern form has garnered him prestigious commissions for museums and cultural institutions throughout his career, from the East Building of the National Gallery of Art (winner of this year's AIA 25 Year Award, page 172) to an addition and renovation of the centuries-old Louvre to a new wing for temporary exhibitions at the German Historical Museum in Berlin (pictured at left). Although he's been "officially" retired for more than a decade, Pei still has projects on his plate and a twice-a-week-at-the-office habit. Shortly after the AIA Accent on Architecture dinner on March 3 in Washington, D.C., editor in chief Robert Ivy visited Pei at his office in Lower Manhattan, where they discussed the evolution of Pei's design thinking, the importance of working abroad, and his current slate of projects.

AR: *You say you have retired, but you continue to be involved in projects. What are you working on right now?*

IMP: I haven't taken any new projects in the past three years—I told myself, if I cannot live long enough to finish it, I don't want it. So I have three projects now. The first one is the Musée d'Arte Moderne in Luxembourg, which is under construction right now. The museum will be located on top of an old, old fortress, Fort Tüngen, which the Austrians built in the 1800s. The client is the State of Luxembourg. I accepted the commission for the project in 1990 or 1991, after I retired, but it began only six months ago—it was stopped altogether five or six years for various reasons. The second project is a museum

in my hometown of Suzhou, China. And I am also designing the Museum of Islamic Art in the Middle East, in Qatar.

AR: *So do these projects involve design work, or development work and decisions about construction?*

1



IMP: It's a little bit of each. I just completed the design for the museum in Qatar, which I accepted about two and a half years ago. It's now under construction, but that's an exceptional one, because usually it takes longer than that. I'm doing most of the work on the Suzhou Museum on my own.

AR: *That's a very active, demanding schedule.*

IMP: I've been active all my life. In 1990 I retired from my firm, I.M. Pei & Partners, and for two years I didn't do much. Then I started to get kind of antsy, so I decided, I'm going to do some more work. And I chose to do work outside the U.S. because I've spent 45 years here and I wanted to learn more about what's happening in the rest of the world. So I travel to the Middle East, I travel to China, I travel to Europe. It's all very rewarding—the only problem is the travel is getting more and more difficult for me now. Ten years ago I would have enjoyed it a lot more.

And my projects have typically taken a long time to complete. Buildings might take on average about five to seven years to finish, but in my case it's been longer, because the projects I have accepted within the past 15 years have been mostly government projects, and those involve some politics and funding issues, and approvals and so forth. So they're slower.

1. Walkways and openings define space at the new wing (Schauhaus) of the German Historical Museum, Berlin, 2003.

2. The sun throws a lattice of shadows from a skylight at the Schauhaus.

2



AR: *Tell me about the museum you're designing in your hometown in China.*

IMP: When this commission came, it was very special. I was born in Suzhou, a city not very far from Shanghai. It's a very interesting town—there is a long artist's tradition there, especially during the Ming and Ching dynasties, which produced many, many scholars and painters and so forth. That's where my family lived for 600, 700 years. When the mayor first came to me about designing a museum, I said no, it's too far away. They invited me to go back six or seven years ago, and I always tried to say no. But finally, a couple of years ago I accepted it. The location could not be more exciting. It's a very special site, surrounded by a wonderful garden. I thought the project would touch on my relationship with my past, my ancestors, my old home. The building is now under construction. It has two more years to go before it's complete.

AR: *How about your other projects? Say, the museum in Luxembourg?*

IMP: That project came to me after I had completed the Louvre. I was approached by the prime minister of Luxembourg and asked to design a museum for modern art, near the fortress [Fort Thüngen], which is being turned into a museum as well. It wasn't as big of a challenge as



3. Visitors walk next to the helical staircase at the Schauhaus.

the Louvre, but I was very interested in it. For instance, I wanted to know why the building would be located on top of a fortress. Luxembourg was and still is today a crossroads, the place where Germany meets the rest of Europe. The country lost part of its territory to Belgium in the 1800s, and during World Wars I and II the German military overran it. The fortress was the natural symbol, the physical symbol of the country. Very few people have visited Luxembourg—when I went there and looked at it, I said, my God, it's built on a rock. And within the rock they had a castle, and within the city there's a network of tunnels so the residents could move around and defend themselves. That was of great interest to me. I was curious to know how Luxembourg remained an independent country—that's why I accepted the commission.

AR: *Let's go back and talk about a few of your past projects. Your work at the Louvre represented one of the first instances of an architect being employed by a major government agency in a way that gave you a prominent role in the country's self-image. Could you talk about that? Were you consciously aware of how important the Louvre was to them at that time?*

IMP: It was a total surprise that they approached me to do the project. You know the French, not to mention the Parisians—they see the Louvre as their monument, so to come to an American for a project like that is something I never expected. I thought perhaps they were just trying to show interest in different architects to try out the idea. But when President Mitterand asked me to see him, I knew that it was serious. Mitterand was a student of architecture, he had done a lot of research before he called me. He said, "You did something special at the National Gallery of Art in Washington—you brought the new and the old together." But John Russell Pope finished the West Building in 1941, so when the East Building opened it was only about 40 years old. But the Louvre is 800 years old! A much bigger design challenge.

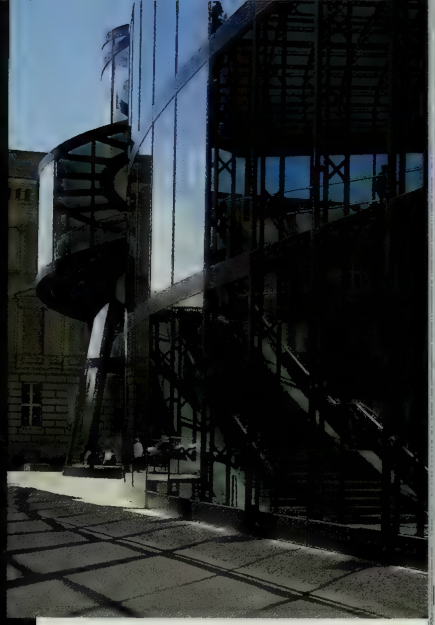
I didn't accept the project right away, excited though I was. Instead, I told Mitterand that I needed four months to explore the project before I could accept it. I wanted that time so I could study the history of France, because what is the Louvre? The first portions were built in the 12th century, and a succession of rulers came, added on, built something, demolished something else. For 800 years the Louvre has been a monument for the French—the building mirrors their history. I thought by asking him for this time it might make him say no, thank you very much, because he was in a hurry—he'd been elected in 1981 and his term would last only seven years, and this was 1983—so there was some pressure for him to accomplish something.

In those four months, I studied. I asked for four visits to the Louvre, one visit each month. And I asked the Louvre to keep things confidential at first, without revealing the fact that I was asked by the president to be involved, so that I could go to France unencumbered and visit the Louvre, assess what's wrong with it, what's right about it, what had to be destroyed or must be saved, that sort of thing. Mitterand agreed to all this. You cannot defend your design without knowing what you're designing for. When I was being questioned by the press about the design later on, all this preparation was very useful.

4



4. Pei likes to play with geometry. A sharp angle within the Schauhaus beckons visitors with its vista to the Zeughaus, a former military depot and museum that is undergoing renovation to house the German Historical Museum's permanent collection.



5

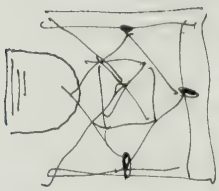
5. Generous glazing at the Schauhaus signifies democracy and the joining of East and West Germany that enabled the founding of the museum.

6. A new glass roof topping a portion of the Zeughaus complements the glazing of the new wing.

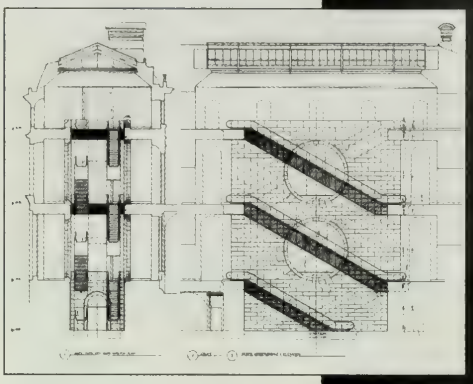
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7. An early sketch of Pei's re-imagining of the Louvre's entry (Grand Louvre project, Phase I), Paris, France, 1989.

8. Section drawing of the Richelieu addition to the Louvre, which Pei reorganized during Phase II of the project, completed in 1993.

9. Spiral staircase at the Louvre, Paris.

10. The pyramid topping the Louvre's entry got all the headlines, overshadowing Pei's complex program of integrating a museum staff divided into seven fractious departments.

AR: *The scope of the Louvre was so vast. You literally went through layers of history as you exposed and joined its lower levels, as well as designing an immense addition, and all with as little disruption as possible to the institution. No one ever focused on that—everyone just talked about the glass pyramid.*

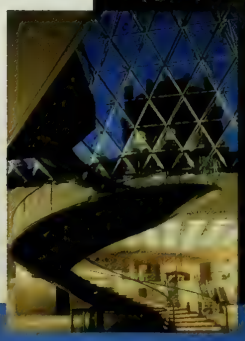
IMP: You're absolutely right. Everybody points to the pyramid, but the total reorganization of the museum was the real challenge. Mitterand understood that. Few people know, for instance, that the French Ministry of Finance used to occupy the Richelieu Wing [north wing] of the Louvre. Mitterand was very aware of the importance of the Richelieu Wing, because without it, the Louvre is just a long L-shaped building instead of a U-shaped building. Soon after he became president in 1981, Mitterand commissioned a competition for a new building for the Ministry of Finance in Paris. That gave him justification to move the agency to a new location, and therefore enabled us to claim that space. Without it, I would not have been able to do the project. I probably would not have accepted the commission—I could not have done anything for the museum.

And the biggest challenge of the Louvre was beyond merely architecture. When I first went there in 1983, it was divided into seven departments, and each was totally autonomous. The department directors would not even talk to each other. They were very competitive for space and money. So, architecturally we had to change this situation—make seven departments into one and unify them as a single institution. I'm not so sure Mitterand realized how big a challenge this was; I certainly didn't. But the result worked out. Today the departments are all unified under one president, and they're also unified architecturally. The fact that people don't realize this huge challenge of the Louvre is totally mind-boggling to me.

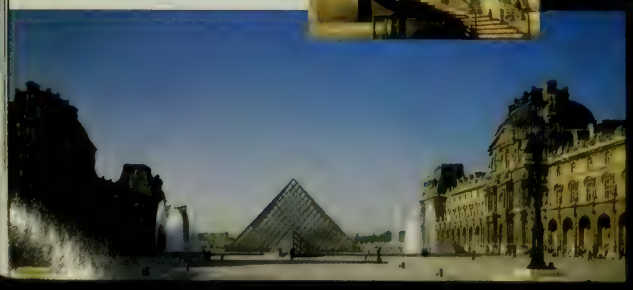
AR: *Let's discuss form for a minute. We talk a lot about form—it dominates the discussion of architecture in the media these days. You yourself are a master of form—the East Building of the National Gallery, for instance, is a superior example of your skills, as the AIA recognized this year. But everything you've talked about so far is about the programmatic, complex, deeper issues that reside within projects. How do your formal skills interplay with this programmatic thinking?*

IMP: Ever since 1990, I haven't been all that interested in form, not at all. To create a work of architecture that looks exciting and different is not the challenge for me anymore. The challenge is for me to learn something about what I'm doing. I've been more interested recently in learning about civilization. I know something about the civilization of China, with my background, obviously, and I think I know something about American history. But that's about all. And I've traveled all over the world, and for a long time I didn't know very much about it, really. When I got the opportunity to do the new wing [the Schauhaus] for the German Historical Museum, for instance, I didn't see it as an opportunity for my own ego, to do something so exciting that every architectural publication would want to put it on the cover. I accepted it because I knew it was going to be a very difficult project, and I wasn't sure I could do something exciting there. Originally the building was to have

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11. Interior court with glass roof, Louvre, Paris.

12. A gallery, Louvre, Paris.

13. More drama in glass at the Louvre, Paris.

12, 13






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14, 15

14. A sketch of the Miho Museum, nestled in the Shigaraki Mountains in rural Japan.

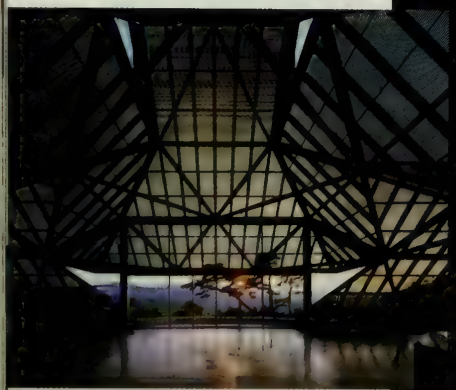
15. Pine trees line the exterior of the Miho Museum, but 80 percent of its structure is subterranean, as a bow to nature.

16. The bridge and tunnel that guide visitors to the museum span two mountain ridges.

17. Louvered space frames at the Miho Museum, near Shigaraki, Japan, 1996.



16



17

been located near the Reichstag, a very prominent site. But ultimately they decided to site this tiny little building behind an enormous military museum [the Zeughaus] dating from the early 18th century, which is very Prussian. I visited that museum, and you'd think that any collection of military artifacts would be all guns and cannons and whatnot, but there's a lot more than you'd expect there—a lot about Prussian history, which of course is the foundation of Germany. [The Zeughaus, a weapons depot before becoming a museum, is now undergoing renovation to house the permanent collection of the German Historical Museum]. This location has much less visibility. I had the idea to do something helical and transparent with the new wing, something that would be symbolic of the unification of East and West Germany. The prime minister personally asked to see some sign of this in the building. When you're asked that by a client, it's an opportunity you just don't waste. So, while it was an exciting challenge, form-making is not the reason I'm still engaged in projects. One of the reasons I took this on was that I wanted to find out as much as I could about Germany's architectural history. The name that kept popping up was Karl Friedrich Schinkel. I've seen his museum, the Altes Museum in Berlin, but I hadn't visited any of his other work until I began designing the new wing. I think his greatest skill was the diversity of projects he achieved, from the very monumental, like the colonnade at the Altes Museum, to the small, domestic skills he brought to the villas he designed in Berlin and elsewhere.

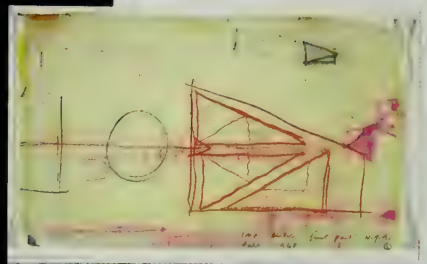
AR: *How did your museum project in the Middle East come about?*

IMP: How do I begin? Qatar does not have much history, it's a new emirate. So I couldn't draw on the history of the country; its history is really just being a desert. But I thought, the one thing I must learn about for this project is the Islamic faith. So I read about Islam and Islamic architecture, and the more I studied the more I realized where the best Islamic buildings were. At the beginning, I thought the best Islamic work was in Spain—the mosque in Cordoba, the Alhambra in Granada. But as I learned more, my ideas shifted. To begin with, the climate of southern Spain is not at all like desert, where most Islamic architecture is built. I kept searching. I traveled to Egypt, and to the Middle East many times. I saw early Islamic architecture in Damascus, Syria, where they took some early Christian churches and transformed them into mosques, so they were not pure Islamic—just as in southern Spain, it's no longer pure Islamic architecture either, because it gets mingled with Christianity. Or in Turkey, where the Ottoman influence is felt, too—it's Islamic but not pure Islamic.

I found the most wonderful examples of Islamic work in Cairo, it turns out. I'd visited mosques there before, but I didn't see them with the same eye as I did this time. They truly said something to me about Islamic architecture. The museum I'm designing is more influenced by the Mosque of Ibn Tulun than any other building. This mosque is very austere and beautiful, its geometry is most refined. You think of Gothic architecture, it's so elaborate. This is the opposite—so simple.

AR: *It's inspiring to see that you're so engaged with these issues. You're still a student!*

18





19

18. The famed triangles-within-the-trapezoid sketch of the East Building of the National Gallery of Art, Washington, D.C., 1968.

19. Paul Mellon, J. Carter Brown, and I.M. Pei stand in the nearly-complete atrium of the East Building, January 1978.

20. The library and research area at the East Building has windows on the National Mall and the U.S. Capitol Building.

20





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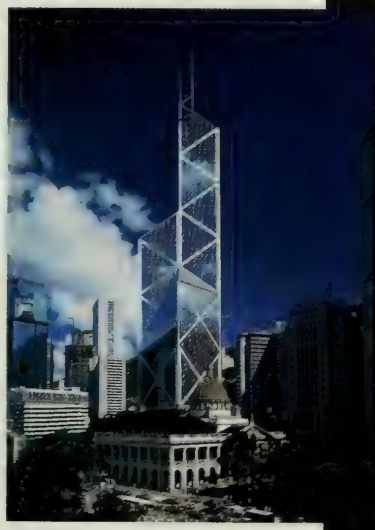
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21, 22

21, 22. The Bank of China Tower, rising high amid the density of Hong Kong, 1989.

IMP: Yes, I am. You always should be. That's what makes life interesting.

AR: *We've talked a lot about museums, but there are other building types that you've been involved with. The Bank of China building, for instance, in Hong Kong—a tall building. The issues you faced with that project are a very different set of concerns from those of museums, aren't they?*

IMP: That's very true. Actually, many of the projects I'm most proud of are tall buildings, especially the housing projects. In New York I have two: one in Kips Bay and one at New York University. At that time, those projects were most challenging, architecturally—how do you enable redevelopment, foster urban renewal with a tall building? For Kips Bay, I had a wonderful client, William Zeckendorf, who was willing to gamble with me on using concrete and not brick for a high-rise apartment building. That was very innovative at the time.

AR: *How old were you when you got the Kips Bay project?*

IMP: I came to New York and worked with Zeckendorf in 1948. I was 30 years old. Kips Bay came to me two years later, in 1950. Later I got my first museum project, the Everson Art Museum in Syracuse. That was about 1960, 1961. I was very busy back then. You don't really get a chance to do anything until your mid-40s. I told my sons that: Don't expect to accomplish too much in the early part of your life. I was fortunate—after the war, I left China, in 1944; there was nothing going on for me at the time. I went back to Harvard to teach and to get my master's degree. I thought teaching would give me the most flexibility in case I had to return to China to be with my family. I didn't really practice architecture until I got to New York; I didn't have many qualifications or much experience at all. Becoming a designer is a long process of learning. You make mistakes when you're young. It's important to have the opportunity to make mistakes.

AR: *What are your days like when you're not at work?*

IMP: At home, I have a wife, fortunately, and my children are all grown, and I have many grandchildren. I spend weekends with my grandchildren; I adore them. On a daily basis, my home life is very simple. I spend about 2 hours every morning reading the newspaper. As my two assistants will tell you, I don't come to work in the mornings, for two reasons. First, I want to be informed—that means I go through *The New York Times* every day, and then I watch some news on television. The second is, mornings are the best time to communicate with my clients abroad. So I communicate with Luxembourg, with Berlin, with Paris—I continue to do work on the Louvre, it didn't end in 1993. So I'm on the phone a lot to my international clients in the mornings, after I get through the news.

Two afternoons a week I come to my office. If I'm not here, I go to my sons' office. I still have two of my projects working through them—the Museum of Islamic Art in Qatar and the Suzhou Museum.

AR: *Did you do any conceptualizing for the redevelopment or the memorial in Lower Manhattan?*

IMP: No. That project probably will take 10 years, and I didn't want to think about a project that I couldn't finish. That's a kind of temptation. It was the same reason I declined to submit an entry for the U.N. addition in New York, the one that [Fumihiko] Maki is now working on. I thought I wouldn't be able to finish it. One has to realize one's limitations. Why kid yourself? ■

23. Pei's first museum project, the Everson Museum of Art, Syracuse, New York, 1968.

24. University Plaza (housing), New York University, New York, 1967.

25. Kips Bay Plaza (housing), New York, 1963.



23



24

25





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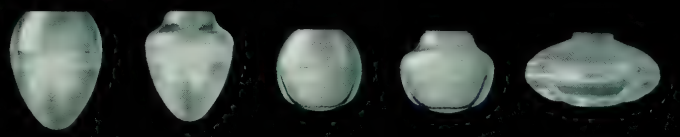
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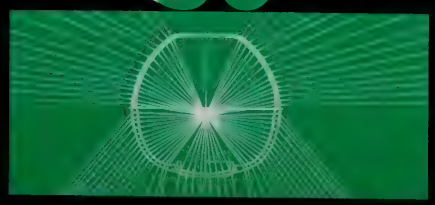
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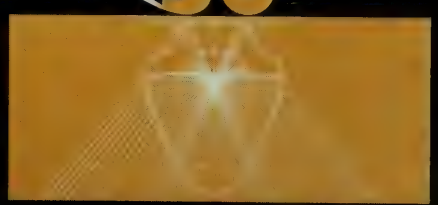
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In a city averse to towers, **30 ST. MARY AXE**, the "towering innuendo" by **Foster and Partners**, is a big ecofriendly hit

By James S. Russell, AIA

Londoners were once skeptical of 30 St. Mary Axe, the tapered bullet that has clambered into the skyline over the past two years. It's usually called the Gherkin, a title standing in for a variety of unprintable descriptions, or the Towering Innuendo. But as its sleek, now-complete form bobs and weaves into view around the city, locals have reportedly developed a fondness for the first tall building to be erected in the City of London (its financial district) in 25 years.

At 40 stories, it would not be regarded a large tower in most of America's downtowns, but in the low-rise, finely grained cityscape of London, its 500,000 square feet look gargantuan. How could a tower so unconventional in nearly every respect look like a big, friendly alien rather than a menacing intruder?

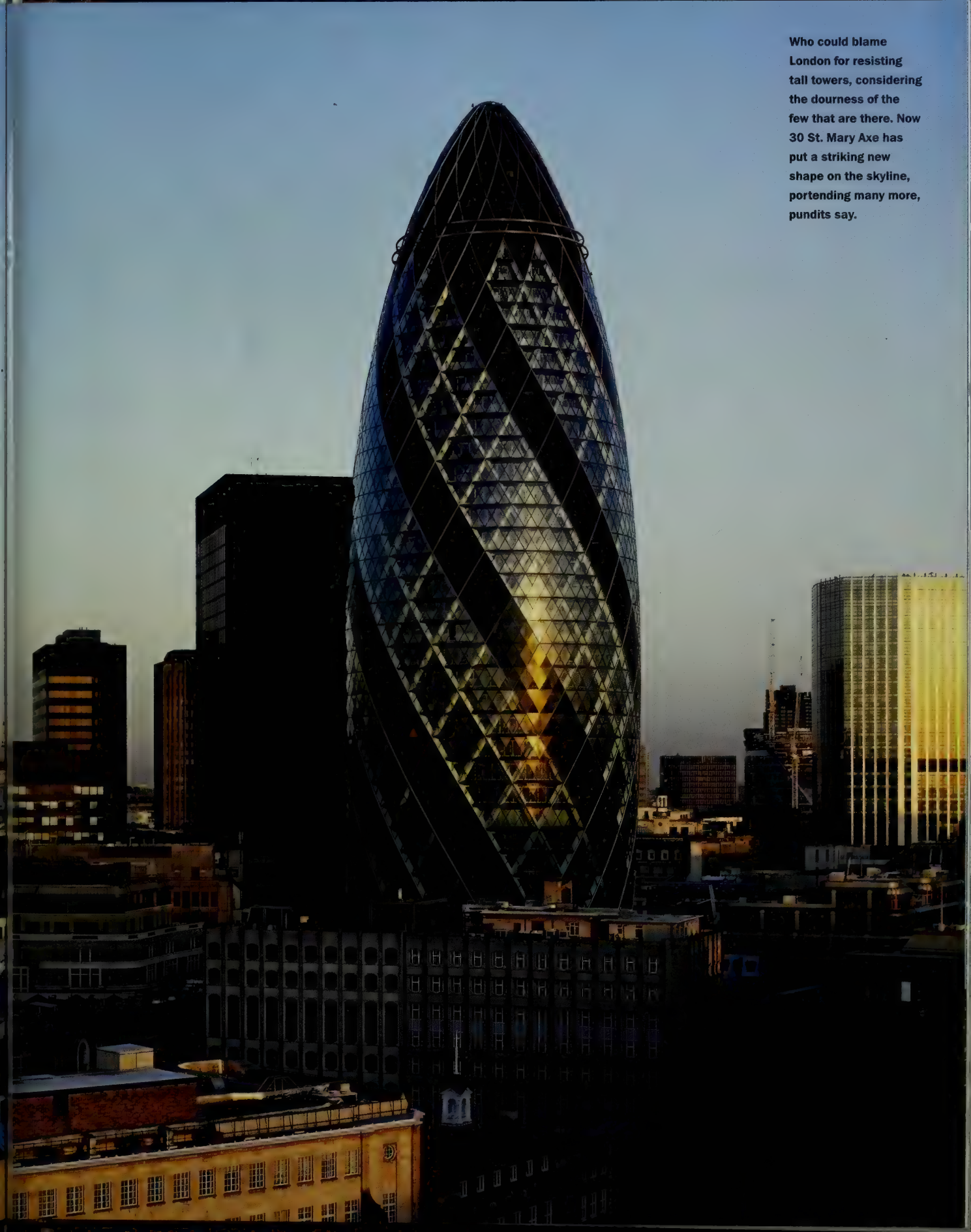
This is no airplane-napkin sketch fast-tracked into reality. Formerly, the site was filled by the Baltic Exchange, a low-rise pile that was severely damaged in 1992 by a bomb planted by the Irish Republican Army. A debate about whether the building could be saved went on for a few years. Thanks to its client, Swiss Re, when Foster and Partners came on the scene in 1997, both recognized that a replacement could be proposed only if it was clearly superior. Extensive local consultation led to an approval process that nevertheless consumed another two years.

The curving profiles that have become a signature of Foster's work in recent years, as in London's City Hall [RECORD, February 2003, page 110], respond to local environmental conditions—and the ability of the architect and its consultants to deploy sophisticated computer-aided

Project: *30 St. Mary Axe, London*
Owner: *Swiss Re*
Architect: *Foster and Partners—Norman Foster, Grant Brooker, Paul Leadbeatter, Michael Gentz, Stuart Milne, Rob Harrison, Jacob Nørlov, Robin Partington, Tim O'Rourke, Paul Scott, Ben Puddy, Ken Shuttleworth, Jason Parker, Francis Aish, Simon Reed, Gamma Basra, Narinder Sagoo, Geoff Bee, Sebastian Schoell, Aike Behrens, Michael Sehmsdorf, Ian Bogle, John Small, Thomas Brune, Robbie Turner, Julian Cross, Neil Vandersteen, Joel Davenport, John Walden, Ben Dobbin, Tim Walpole-Walsh, Paul Kalkhoven, Hugh Whitehead, Chris Kallan, Richard Wotton, Jürgen Küpper, Helen Yabsley*
Consultants: *Arup (structural, fire safety); Hilson Moran Partnership (mechanical and electrical); BDSP (environmental engineers)*
General contractor: *Skanska Construction UK*



PHOTOGRAPHY: © RICHARD BRYANT/ARCAID (THIS SPREAD)



Who could blame London for resisting tall towers, considering the dourness of the few that are there. Now 30 St. Mary Axe has put a striking new shape on the skyline, portending many more, pundits say.







modeling and analytic tools. In this case, the Foster team, including Ken Shuttleworth, who recently left the firm, came to the circular plan and tapering section because it lets wind slip by, according to Rob Harrison, an associate partner, which reduces lateral loads on the structure. More important, the shape minimizes the tendency of tall buildings to focus gale-force winds on unwitting pedestrians at street level. While the form puts the largest floors above the prevailing 10-story-high norm, where views open across the city in all directions, Foster slimmed the tower on the lower floors as well, which opened the dim, surrounding streets to

HOW COULD SO UNCONVENTIONAL A TOWER BOB AND WEAVE INTO VIEW LIKE A BIG, FRIENDLY ALIEN?

daylight. The trim ground floor left space to carve out a handsomely proportioned plaza, offering a shortcut through the City's twisting blocks for cell-phone wielding dealmakers headed to the Tube. Such sensitivity to the public realm helped the building survive the tough planning review.

The diagonally gridded exterior binds the building form visually. (Imagine the bulging-gut look it would have with vertical mullions.) It actually emerged as Foster and his team worked out the most remarkable feature of the building, the six-level light wells, six per floor, which spiral continuously upward. According to John Brazier, the project director at Arup, reconciling the 5-degree-per-floor rotation in the light wells generated the diagonal grid of the structure and the cladding (see "Building a Tower on the Bias," page 222).

Foster has long designed to achieve a more humanely social work environment. In the Commerzbank tower (RECORD, January 1998, page 69), he pioneered the use of skygardens—restful oases for informal meetings, for sipping a coffee, or just thinking—hovering high above the city. While conventional real estate wisdom might deem the light wells a frill, they are integral, in Foster's hands, to a strategy that addresses the chief criticisms of tall buildings as work environments: that the big pancakes of space neither offer the amenities highly valued staff want nor encourage collaborative work. For Swiss Re, Foster offset each level of the light wells to offer terrace overlooks. The advantage is simple, if a bit abstract: If you see people on other floors of a tall building, you are much more likely to feel they are part of your group, and that you are in this



30 St. Mary Axe pops into view from vantages all over London. Its anomalous form and intricate, beehive-like skin change the notion of skyscraper scale. In coming years, it may anchor a cluster of new towers.

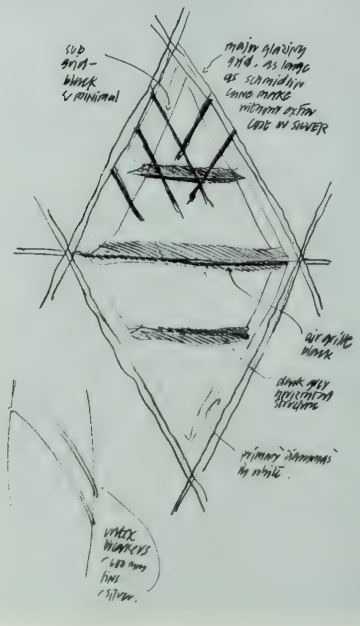


Light wells divide the building vertically into six-story modules. To suit tenants, individual floors can be isolated.

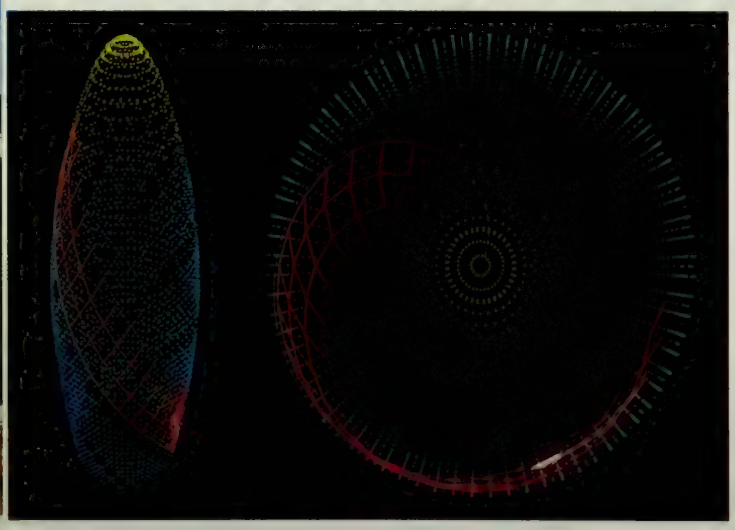
BUILDING A TOWER ON THE BIAS

The engineers devised a two-story-high triangular structural module for the building: tubular columns running up the exterior that are fireproofed and clad in faceted, painted metal. (Because cross bars are painted dark and diagonal members painted white, the structural grid only looks like a four-story diamond when it can be seen through the glass from outside.) Computer analysis helped to locate fixing points in three dimensions (diagrams, bottom left). Special fittings at the diagrid intersections align adjacent panels to follow the bidirectional faceted geometry. The latticelike structure and curved surface efficiently resist wind forces, which means that floor beams could be sized smaller and the core did not need to be braced, freeing up interior space. (The occupied area is column-free.)

The diamond-shaped glass lites look normally sized but are actually quite large, each spanning a full floor, top to bottom. The glazing mullions are triangular in section as well, to reduce their visual bulk. The structural diagrid ends at floor 38; slim sections of curtain-wall framing continue upward, arcing delicately into a domed, glazed roof at the top (below), where the glass units are both tinted (to avoid glare) and argon-filled (for insulation).



Inside the column diagrid, an inner membrane of glass leaves an insulating air layer between the outer curtain wall and the occupied space (heated by building-exhaust air as needed). A tapered, horizontal spandrel divides floors. *J.S.R.*







Tinted glass cladding the light wells forms dark spiraling stripes on the otherwise transparent facade. White metal clads the structural diagrid inside the glass, traced by external white-painted mullion caps.



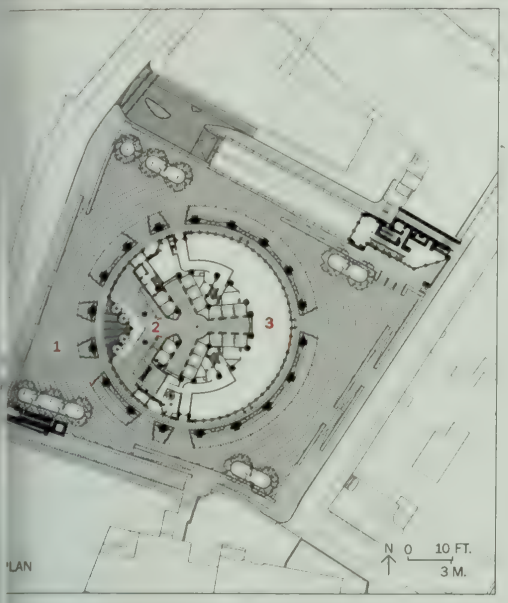


business endeavor together. You'll feel invited to move from floor to floor rather than remaining psychologically sealed in your own area.

On this much tighter site, the social spaces are narrower, more intimate than at Commerzbank. "Everyone's conscious that the balcony edges are the best spaces in the building, with great views up and down the light wells," said Sara Fox, who has directed the building project for four years, after working to build the firm's innovative American branch in Armonk, New York [RECORD, June 2000, page 144]. These areas are reserved for coffee bars, copy centers, and other informal-gathering functions, rather than devoted to departments. "We spent a lot of time with staff talking about the interconnectivity this makes possible," she said. As people move into the building, she adds, "they come up to me and say, 'Oh, *now* I get it.'"

Workplace quality and energy conservation are inextricably woven together in the building. "We wanted an environmentally responsible building," explained Fox. "We didn't have a checklist; we asked Foster to explore what was possible." The commitment was meaningful for the company well beyond corporate altruism. "We are in the reinsurance business," Fox explained. "For us, sustainability makes excellent business sense because we pay claims on behalf of clients for floods, heat waves, droughts. To the extent that these claims are related to global climate warming, it is only prudent of us to contribute as little to it as possible."

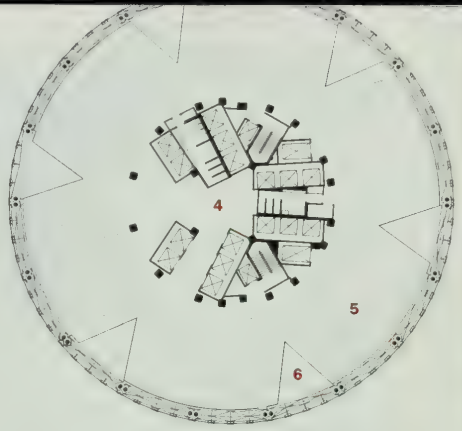
The light wells bring daylight deep into the space, even to desks positioned closest to the core. ("That's a lifestyle issue—quality of workplace for staff," explained Fox.) The quality of daylight from the floor-to-ceiling exterior windows is also high, because heat gain from the sun is trapped in the space between the external curtain wall and a second glass wall placed just inboard of the external column diagrid. The insu-



'LAN



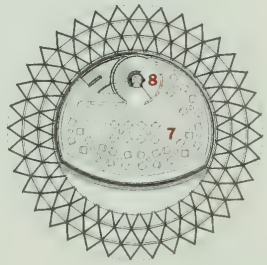
GROUND FLOOR



SIXTH FLOOR



TWENTY-FIRST FLOOR



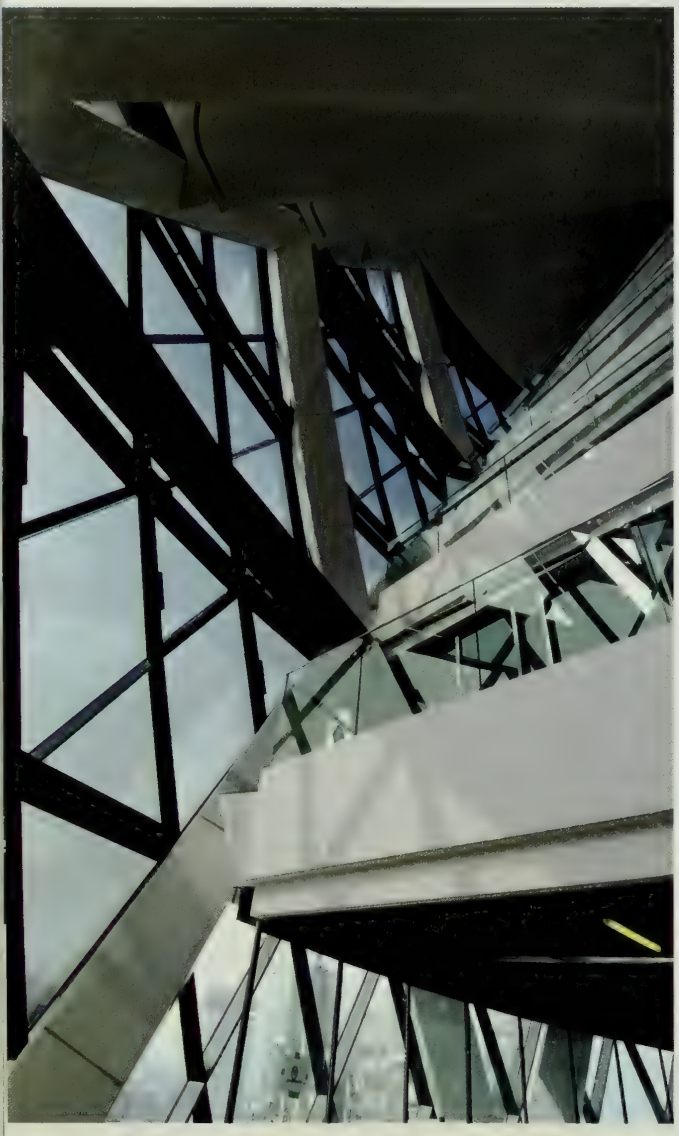
FORTIETH FLOOR

0 20 FT.
6 M.

1. *Entry*
2. *Lobby*
3. *Retail*
4. *Core*
5. *Office modules*
6. *Light well*
7. *Private dining*
8. *Elevator/stair*

The inward taper of the tower brings sun into a generous plaza that opens up dark, medieval streets (opposite, top). The slim curtain wall forms a dome over a rooftop restaurant nearing completion at press time (opposite, bottom). The diagonal grid of the structure opens to form a recessed entrance leading to the lofty lobby (right).







lating layer not only saves energy, it permitted the use of clear glass, protected by blinds in the thermal layer. By contrast, the glass in the light wells needed to be deeply tinted (visible on the exterior as dark, spiraling stripes). The triangular light wells divide the floors into six 2,500-square-foot (on average) rectangular wedges, offering an efficient shape for laying out offices or open-plan workstations.

With automatically opening windows, the light wells conduct fresh air. The interior glass wall is left out at the balconies, so that fresh air penetrates the entire floor (one much deeper than the naturally ventilated norm) without mechanical assistance. Air warmed by occupants and equipment rises up the chimneylike light wells, drawing in outside air. The round floor plate aids airflow by molding a distinct zone of negative air pressure on the leeward side, which draws in more windward-side air. Although the building is mechanically heated and cooled, the natural-ventilation scheme should leave the systems idle much of the time, accounting (with the daylighting) for much of the building's reduced dependence on climate-altering fossil-fuel combustion. (Local air-handling units allow mixed-mode use by zone and by floor, as well.) According to Brazier, current local guidelines for low-energy offices target electricity use of 175 kilowatt hours per square meter (10.76 square feet). He expects Swiss Re's new building to knock up to 25 kwh off that.

"IT'S ONLY PRUDENT OF US TO CONTRIBUTE AS LITTLE AS POSSIBLE TO GLOBAL WARMING."—SARA FOX

Swiss Re occupies about half the building; the remainder has yet to be tenanted in a moribund real estate market. Nevertheless, the completion of 30 St. Mary Axe—and its acceptance—portends a deluge of new office buildings, according to pundits. As they vie for height, the towers announced to date compete on the basis of amenity, energy responsibility, and aesthetics (the designers are all household names: Piano, Grimshaw, Kohn Pedersen Fox, Rogers, Wilkinson).

None of the long-announced towers has yet begun construction. Fox echoes their developers in claiming that more towers will get built. "London is really the financial center of Europe. Most firms, particularly in financial services, want to be at the heart."

London and Lower Manhattan, both seeking dominance of global finance, now offer a study in contrasts. "Location is so much more important in the U.K. than in New York," explained Fox, noting that a consensus has developed that London's City must grow to remain vital. New York, which perfected the skyscraper downtown, has ceded tall-building innovation to Europe and Asia. It is far less sure that the proximity enabled by tall buildings still pays off. Will tenants balk at innovations that raise rents? Is a horizontal, dispersed business model more prudent in a world wracked by terrorism?

The next few years will tell which model comes out on top. The stakes are certainly high. If a great number of American financial figures start taking meals in Swiss Re's "nose cone" restaurant (it's private; sorry), where breathtaking city panoramas open through the spidery fretwork of the building's diagrid crown, you can be sure London's (and Foster's) lessons won't be lost. ■

Sources

Curtain wall: *Schmidlin; Waagner Biro*

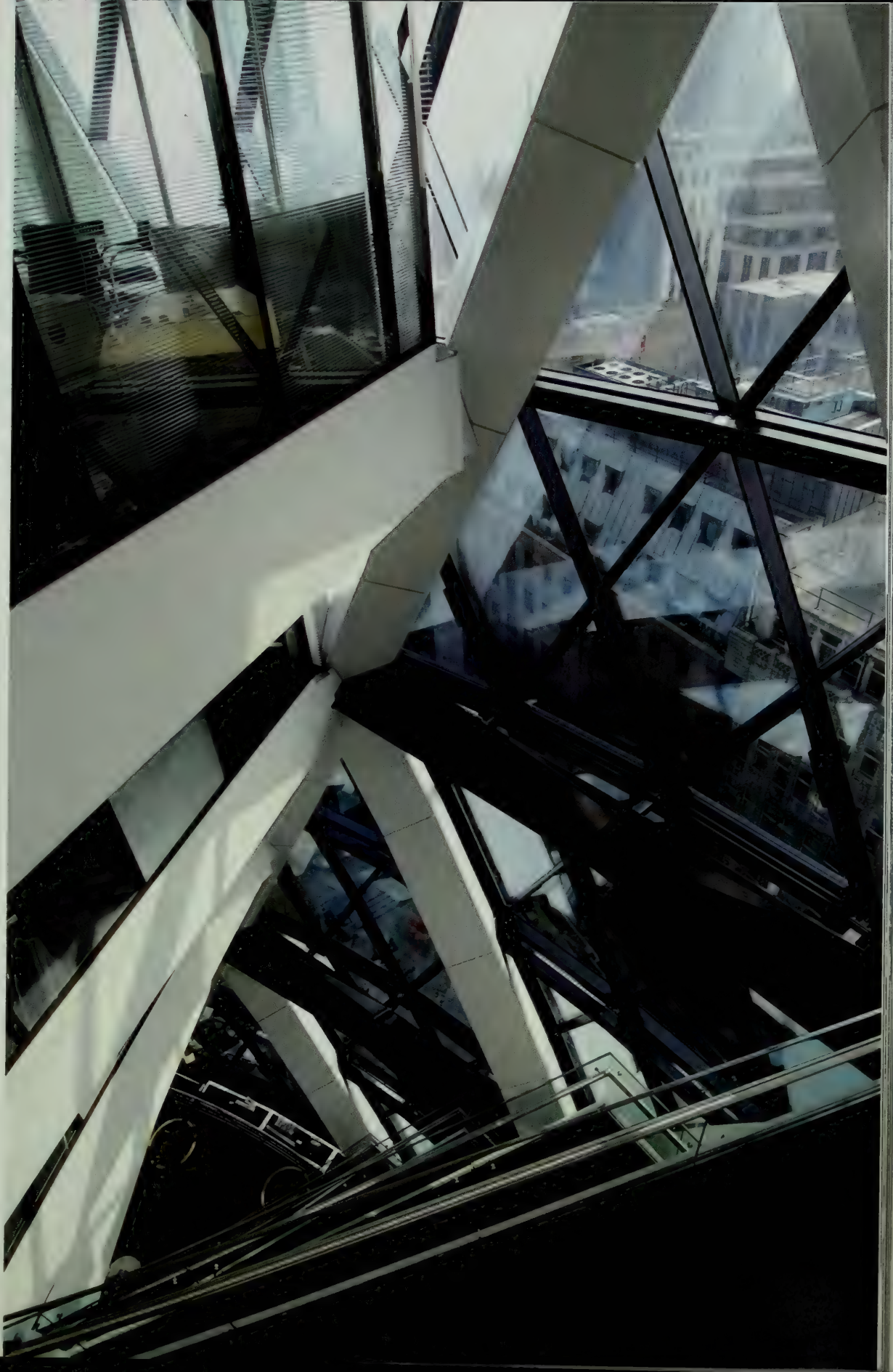
Glass: *Eckelt; Okalux*

Acoustic wall panels: *Decoustics*

Lighting: *Wila*

Security gate: *Marzorati Ronchetti; Gunnebo Mayor*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



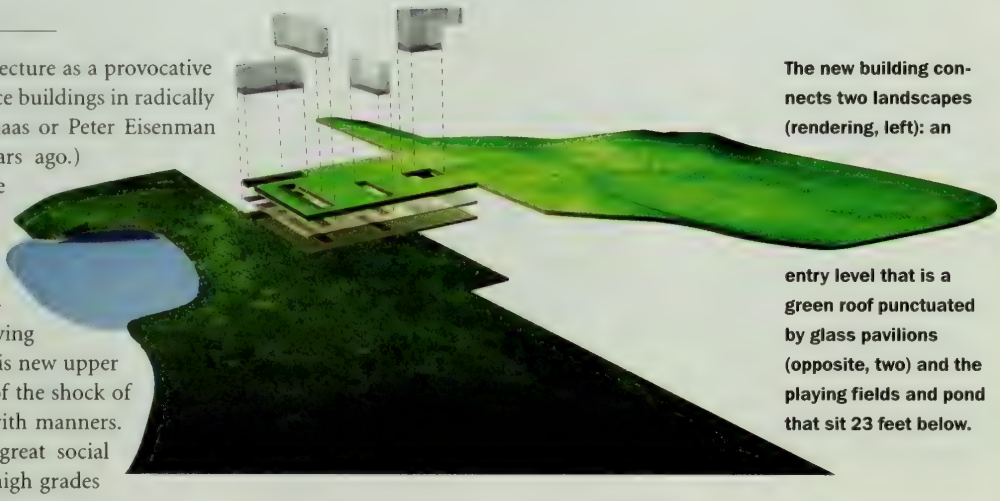
Swiss Re reserves the terraces in its light wells—and their dramatic views (looking up, opposite; looking down, this page)—for functions that trigger idea sharing. The white-painted diagonals and dark-painted horizontals both enclose structural members. Making other floors visible also breaks down physical barriers to collaboration. Ample daylight for offices (opposite, bottom) comes both from the curve of the exterior and the wedge-shaped light wells.





Roger Duffy of **SOM** weaves together art, architecture, and landscape in a crystalline new upper school at **GREENWICH ACADEMY**

By Clifford A. Pearson



The new building connects two landscapes (rendering, left): an entry level that is a green roof punctuated by glass pavilions (opposite, two) and the playing fields and pond that sit 23 feet below.

Some architects celebrate architecture as a provocative act, forcing people to experience buildings in radically new ways. (Think Rem Koolhaas or Peter Eisenman today or Adolf Loos 100 years ago.) Roger Duffy, AIA, a design partner in the New York office of Skidmore, Owings & Merrill (SOM), has a very different way of approaching his work, even though it too pushes the boundaries of architecture. "A lot of my projects are about resolving differences," he explains while touring his new upper school at Greenwich Academy. Instead of the shock of the new, he delivers bold architecture with manners. Like a foreign-exchange student with great social skills, his buildings stand out but earn high grades for getting along well with others.

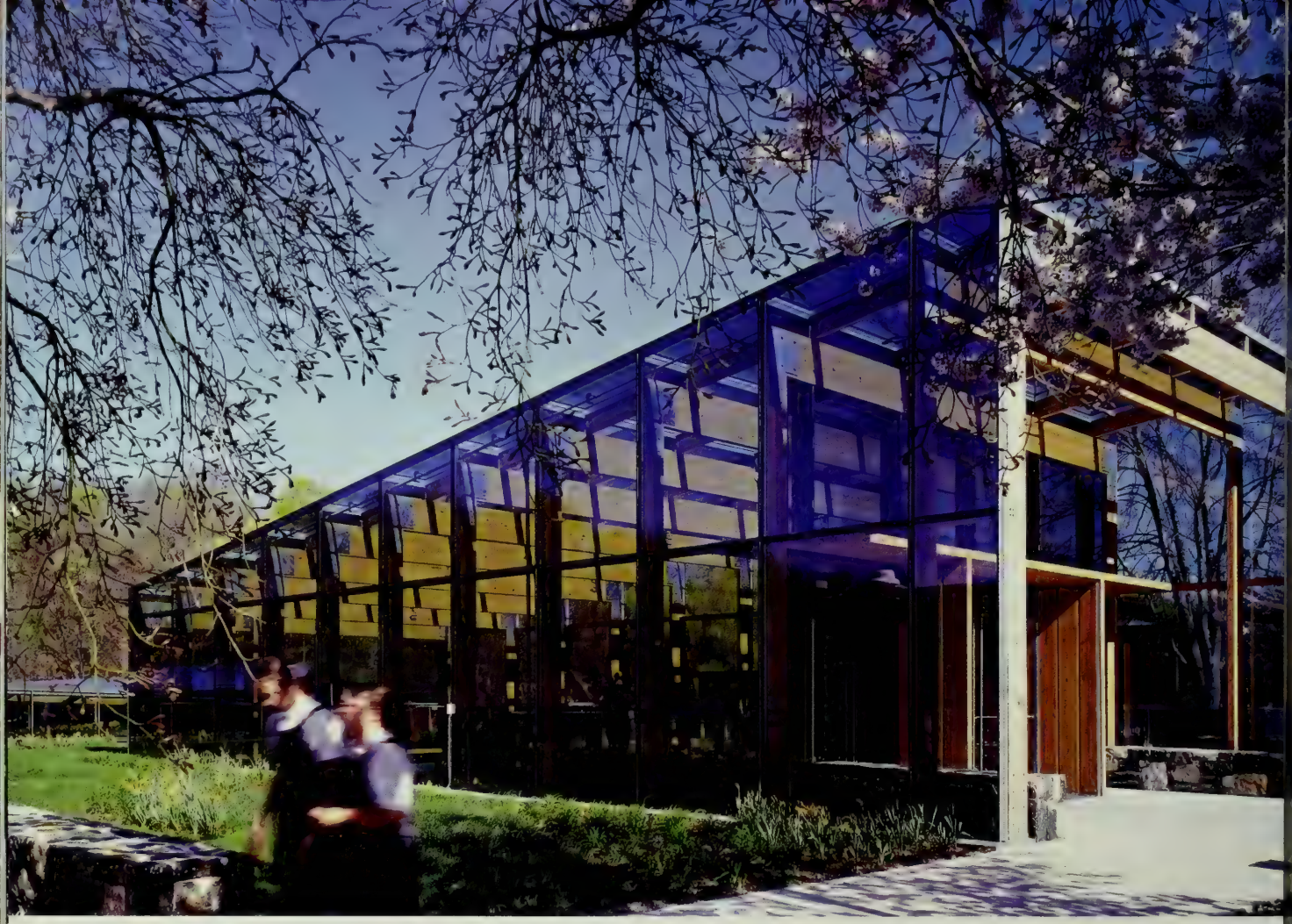
A 45,000-square-foot addition to a private girls' school in one of the country's most affluent communities, the new building at Greenwich Academy must fit between a nondescript middle and lower school from the 1970s to the north, a 1990s performing arts center and gymnasium to the south, and a Georgian mansion to the east that originally housed the entire school but now serves as its administrative center. In addition to this awkward mix of eras and structures, the new upper school had to negotiate a 23-foot drop from the campus's entry level to that of its playing fields and pond to the west. "We decided to use our building to weave together the two topographies," explains Duffy. "We saw the project as a landscape connecting the campus."

Sharon Dietzel, the head of the upper school, admits that SOM was not an obvious choice to design the building, since the firm is better known for its large commercial work. But when the school asked several architects to propose ideas for renovating the existing upper school, SOM recommended tearing it down and building from scratch. "Although it was probably more expensive, we all knew that was the right approach," Dietzel notes. During initial conversations with the school's faculty and staff, Duffy and his team helped the client envision a facility quite different from anything already on the campus. "By talking about light and air, instead of square footage or style, they helped us think in a different way," recalls Dietzel.

Integrating landscape and architecture, Duffy and his team created a grassy lawn on the building's roof, which serves as the entry level. Glass pavilions (or "light chambers") emerge from this artificial landscape, bringing daylight into the building, which tumbles down the hillside. As visitors enter the upper school through the largest light chamber, they see only grass, glass, and the woods beyond. Low stone walls, made from rock dug from the site, offer places to sit in good weather and help connect the new building to the earth and the old mansion's stone base. The new snaps elegantly into place here.

The light chambers—clear glass boxes supported by exposed glue-laminated timbers 4 inches thick—organize the school into its four main components: math/sciences, art, humanities, and learning center (library). Classrooms, faculty offices, and other spaces for each discipline cluster around their particular light chamber, creating a critical mass of activity and a sense of identity. But common spaces flow

Project: *Greenwich Academy Upper School, Greenwich, Connecticut*
Architect: *Skidmore, Owings & Merrill/New York—Roger F. Duffy, AIA, design partner; Peter Magill, AIA, managing partner; Walter P. Smith, AIA, education specialist; Scott Kirkham, senior designer; Christopher McCready, AIA, project manager; Marie-Christine Bellon Manzi, Thibaut DeGryse, Nayareen Chapra, Jon Mark Capps, Javier Haddad Conde, project team*
Collaborating artist: *James Turrell*
Engineers: *DiBlasi (structural); Atkinson Koven Feinberg (mechanical)*
Landscape: *Brown and Sardina*
General contractor: *Turner Construction*









The entry pavilion (above and opposite) also serves as the hub for the math/science department. A translucent glass floor around the entry stairs brings light to the level below. An elegant curtain wall rises above the green roof to become a glass balustrade (left). Shades on the building's perimeter walls let users control the amount of sun that comes inside (far left top and bottom).

smoothly into one another, so you get a sense of connections, not boundaries, as you walk through the building.

During design development, Duffy invited artist James Turrell to collaborate on the light chambers. "It increased the level of difficulty logarithmically," says the architect, "but was worth it." Turrell turned the four glass containers into colored-light boxes using a combination of fiber optics and light-emitting diodes (see sidebar, page 232). Turrell's role was much more than that of an artist adding an installation to a building project, states Duffy. "He was a true collaborator," helping the architects shape the glass pavilions and the experience of moving through the building. For example, the artist convinced the architects to torque the roof angle of the two light chambers visitors see as they enter the first chamber. "This way, you read the subsequent chambers as volumes, not just as planes," says Duffy.

Beyond the pavilions, the architects carved a series of outdoor rooms from the hillside site to bring daylight in from the north and south. The largest of these spaces—what Duffy calls the "learning center courtyard"—acts as a kind of campus piazza linking the upper school to the cafeteria and middle and lower schools to the north. "Before, we had a series of disconnected buildings," explains Dietzel. "Now we have an academic village."

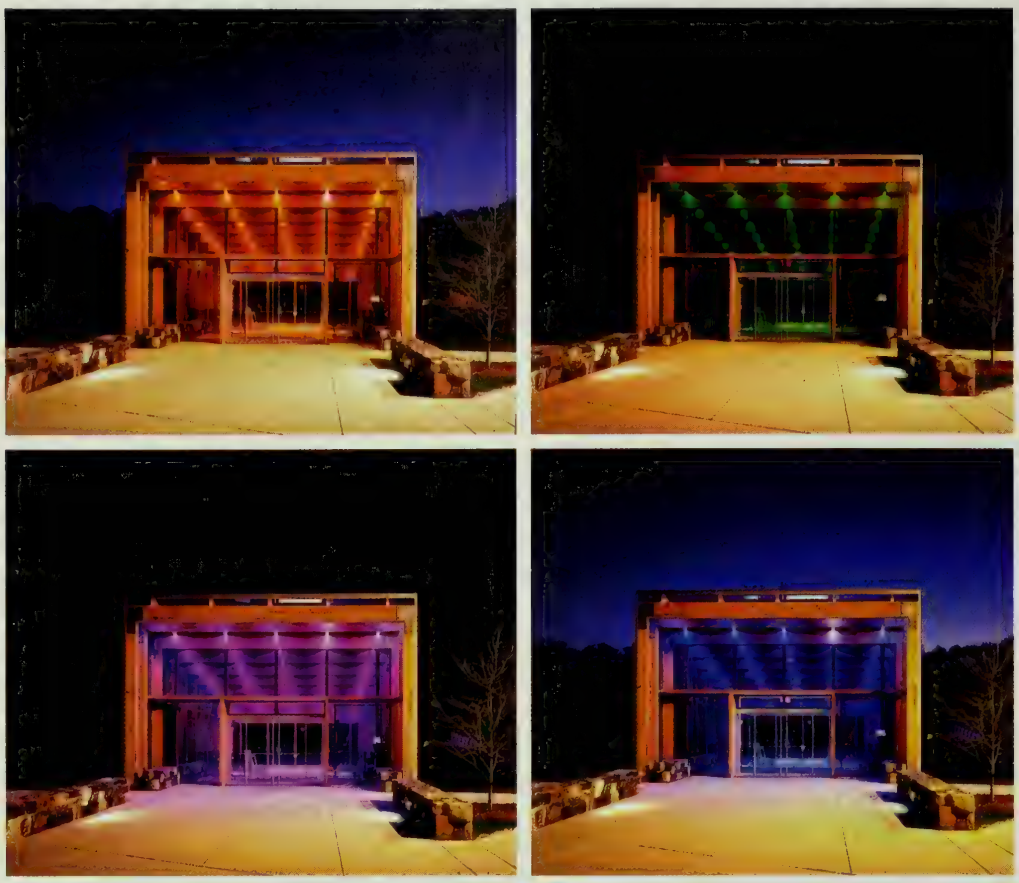
Once upon a time, school architects tried to impress on students the importance of learning by designing buildings that harkened back to bygone eras or used heavy materials rooted in historical associations (Harvard brick or Neoclassical stone, for example). SOM tried a different tack at Greenwich Academy, designing a building so light that it almost disappears in the landscape. To do this, the architects devised a steel-frame structure with a glazed curtain wall for the bulk of the building and glue-laminated timber frames for the light chambers. "The wooden members soften the sharp edges of the boxes," says Duffy. "We didn't want a hard Modernism."

All classrooms enjoy floor-to-ceiling glazing on the outside and daylight coming in from the light chambers on the inside. A translucent glass floor on the upper level of the entry pavilion adds to the sense of light everywhere. Interior and exterior shades allow people to control sun coming in or views from interior common spaces.

"THE LIGHT HAS A PHYSICAL AND PSYCHOLOGICAL AFFECT ON PEOPLE; IT RELAXES THEM," SAYS THE SCHOOL'S HEAD.

The building's architecture has affected the way people behave in it, says Dietzel. "We have 150 adolescents here, but it's always quiet. All the light has a physical and psychological affect on people; it relaxes them." At the same time, the transparency of the architecture has made people less territorial, she notes. Teachers and students interact with each other all over the building, not just in the more formal settings of the classroom and teacher's office. She also reports that attendance is up, even for seniors who have the option of spending some time off-campus. "This building celebrates the potential of children, and so few schools ever do that."





To show how art can be integrated with a learning environment, SOM collaborated with James Turrell on the design of the school's light chambers, turning them into glowing boxes whose colors change slowly during a programmed time cycle. Fiber optics set into channels at the threshold of each chamber and the perimeter of the floor create planes of colored light, while bands of light-emitting diodes (LEDs) on the walls and timber purlins produce "clouds" of color. Each of the four chambers has a different colored frit on its glass, providing a subtle range in hues from pink to blue, green, and white. A computer program controls the changing colors, so light seems to move from one chamber to another. Due to budget constraints, only two of the glass pavilions are fully equipped with the fiber optics and LEDs, though all have the channels needed to accommodate the lighting. Photographs (left) show the math/science light chamber, which is the school's main entry, during phases of the color cycle. *C.A.P.*

1. *Math/science light chamber and entry*
2. *Math/science classrooms*
3. *Faculty offices*
4. *Art light chamber*
5. *Administration*
6. *Student commons*
7. *Humanities light chamber*
8. *Humanities classrooms*
9. *Library light chamber*
10. *Library*
11. *Sports terrace*
12. *Art classrooms*
13. *Media center*
14. *Lockers*
15. *Library courtyard*
16. *Science courtyard*



LOWER LEVEL



UPPER LEVEL



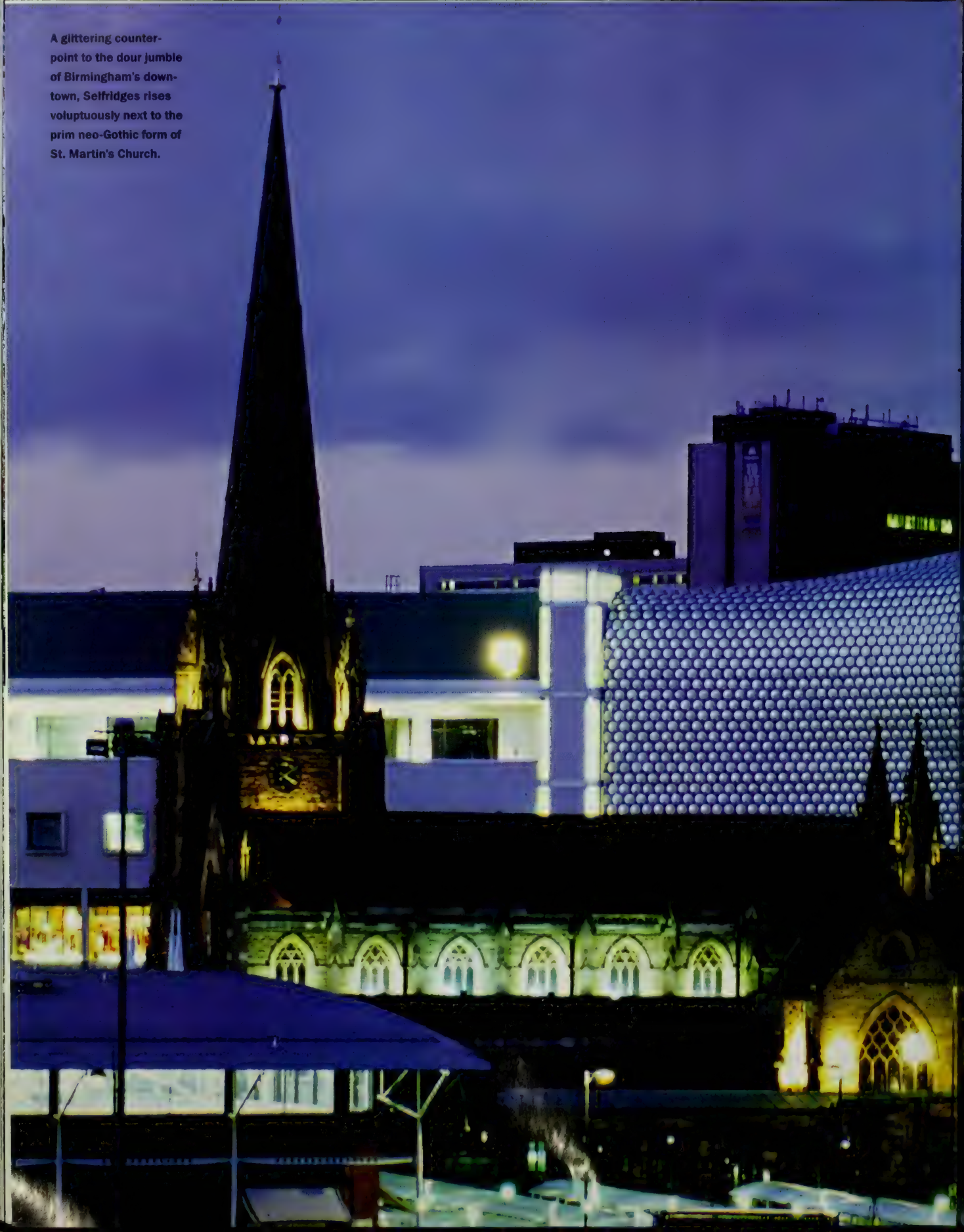
Duffy sees Greenwich Academy as "a beginning," the first in a series of projects that explore the nature of collaboration and draw a sense of unity out of programs pulled in many different directions by many different forces. He and his studio at SOM are currently finishing work on a public elementary school in Fairfield, Connecticut, that opens in August, and they are collaborating again with James Turrell on a building at Deerfield Academy, which will be completed in the summer of 2005. "Instead of bringing him in during design development, we've been working together from the very beginning of the project," notes Duffy with pleasure. Other projects he sees as exploring similar ideas include a performing arts school in Camden, New Jersey, and the Skyscraper Museum, a small but dazzling interior space that recently opened in New York's Battery Park City.

Duffy talks about design that unifies different forces, bringing old and new, upper and lower, indoors and out, into equilibrium and harmony. When discussing collaboration with artists and other designers, he speaks of "conciliation," a word not found in many architects' vocabularies. "The kind of work I'm interested in requires a level of trust between collaborators and doesn't involve the master stroke of the great architect." ■

The library's light chamber runs on axis with the school's original mansion (above). The light chamber in the art department (right) leads out to the playing fields.



Metal/glass curtain wall: *Suntech of Connecticut; Interpane Glass*
Skylights: *Interpane Glass*
Glue-laminated wood: *Unadilla Laminated Products*
Planted roof: *American Hydrotech*
Carpeting: *Karatan; Mohawk Commercial*
Interior ambient lighting: *Zumtobel Staff*
Reception furniture and library desk: *Custom by Skidmore, Owings & Merrill*
Metal doors: *Suntech of Connecticut*
Brick walls: *Connecticut Mason/Joe Capasso Mason*



A glittering counter-point to the dour jumble of Birmingham's down-town, Selfridges rises voluptuously next to the prim neo-Gothic form of St. Martin's Church.

Future System's curvaceous outpost in Birmingham has helped turn the dowdy SELFRIDGES department-store chain into a must-shop destination

By James S. Russell, AIA

A clay model in Future Systems' London office could be titled *Reclining Woman's Torso*. It is rough and barely suggests architecture. But it has come to life as the four levels and 240,000 square feet of a Selfridges department store. Sensuously true to the early study, its rump gently swells outward and upward. And it looks just a bit squished at the bottom, creating the same effect the weight of real flesh would.

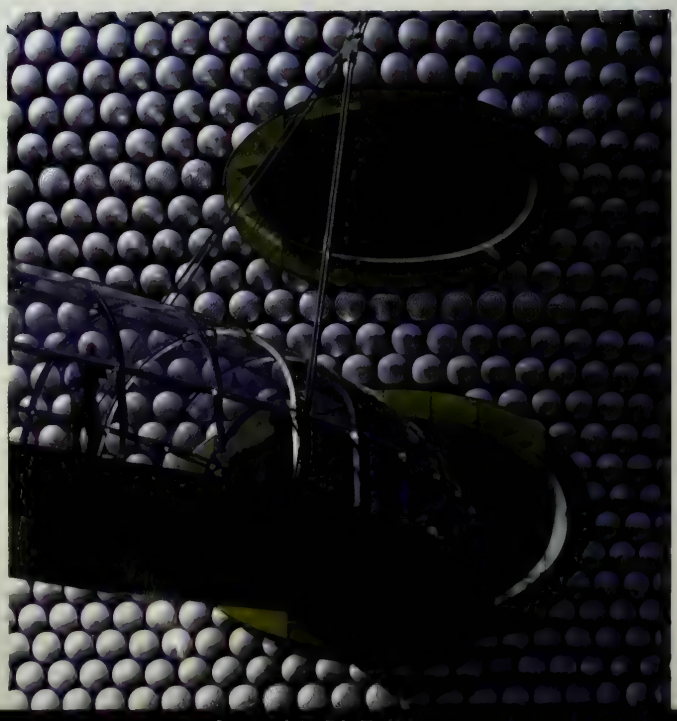
The building has become an instant landmark since it opened last fall in Birmingham, the U.K.'s second-largest city. In the retailing industry, which had resigned itself to the inevitability of department-store decline, it's a sensation—compared often to the Bilbao Guggenheim. In London, Selfridges flagship store remains a columned, city-block-size palace (designed by Daniel Burnham) on Oxford Street. But Birmingham is the crowning achievement in the transformation of a dowdy, middle-of-the road chain to a hip, must-shop destination.

Vittorio Radice, an Italian retailer inevitably described as "visionary," refashioned the chain, focusing on younger shoppers who had regarded Selfridges and many of its competitors as the kinds of places

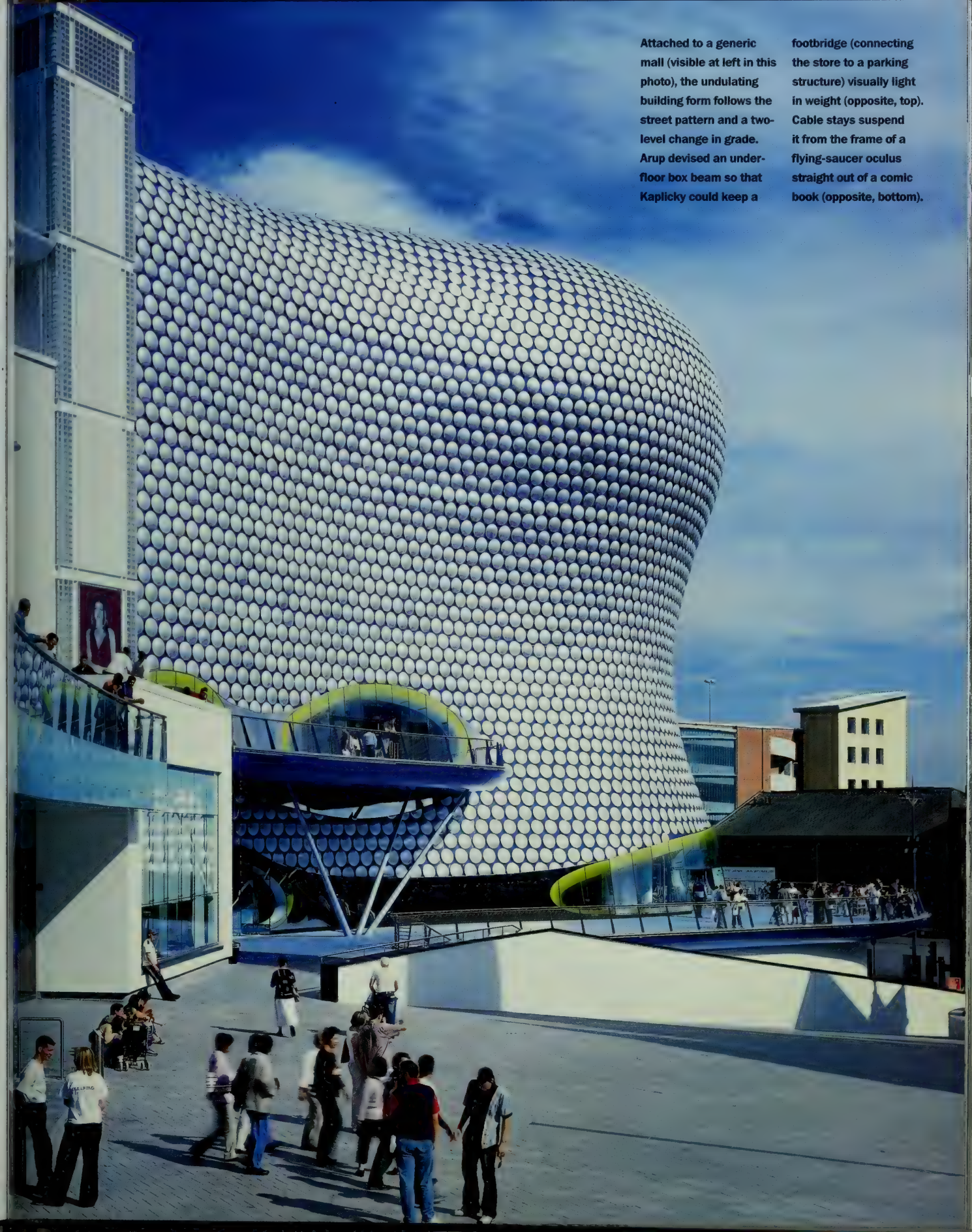


to be visited only with doting relatives determined to find something practical. Radice brought back the theatricality that had historically defined the department store, turning the London flagship into a shrine to Bollywood, for example. "Body Craze," another promotion, featured 600 nude volunteers riding up and down the escalators.

In the heyday of the department store, celebratory architecture was part of the appeal. In Birmingham, Radice restored that tradition, too. A developer offered him an à la carte package: a site in a new urban mall at the center of Birmingham's knot of twisting shopping streets, including a ready-to-go design for a boxy volume wrapped in a queasy mix of Tuscan stripes and Modernist steel beams. Like the rest of the mall, it was a design intended to appeal to everyone by offending no one. It was



Project: *Selfridges Department Store, Birmingham, U.K.*
Architect: *Future Systems—Søren Aagaard, Nerida Bergin, Sarah Jayne Bowen, Lida Caharsouli, Julian Flannery, Harvinder Gabhari, Dominic Harris, Nicola Hawkins, Matthew Heywood, Candas Jennings, Jan Kaplicky, Amanda Levete, Iain MacKay, Glenn Moorley, Andrea Morgante, Thorsten Overberg, Angus Pond, Jessica Salt, Severin Soder, project team*
Engineer: *Arup (structural, mechanical, fire protection, facade engineering)*
Project manager: *Faithful + Gould*
General contractor: *Laing O'Rourke*



Attached to a generic mall (visible at left in this photo), the undulating building form follows the street pattern and a two-level change in grade. Arup devised an under-floor box beam so that Kaplicky could keep a footbridge (connecting the store to a parking structure) visually light in weight (opposite, top). Cable stays suspend it from the frame of a flying-saucer oculus straight out of a comic book (opposite, bottom).

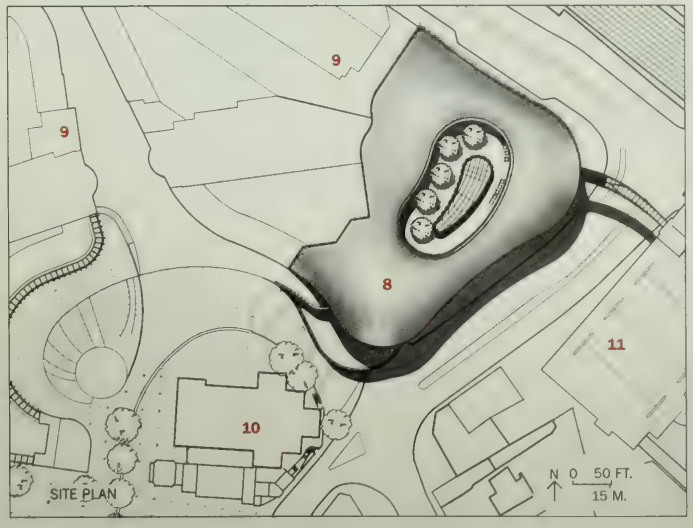


SECTION A-A

1. *Selling space*
2. *Atrium*
3. *Secondary atrium*
4. *Garden and gym (unbuilt)*
5. *Bridge to parking structure*
6. *Loading and service*
7. *Mall entry below*
8. *Selfridges*
9. *Mall*
10. *St. Martin's Church*
11. *Parking structure*



THIRD FLOOR



SITE PLAN

exactly the retail image that Radice had spent years erasing. "He didn't think it was good enough," explained Jan Kaplicky, a partner in Future Systems. "How would you get people there?"

Radice invited Future Systems and two other firms into a process that fit somewhere between an interview and a competition. Going in, Kaplicky and partner Amanda Levete were anything but a shoe-in. They had designed much, but built little, though their experience includes small designer boutiques in New York and London. They didn't have a "commercial" profile in a retailing industry ruled by last month's sales data. But they proved to have the shopping-culture gene. Levete and Kaplicky prepared sketches and the evocative model to suggest possibilities for Radice. "He understood very well that the image could do what he wanted, which was to draw people from a 30-mile radius," said Kaplicky. It wasn't the building alone, he added, but the promise it signaled of what would be found within.

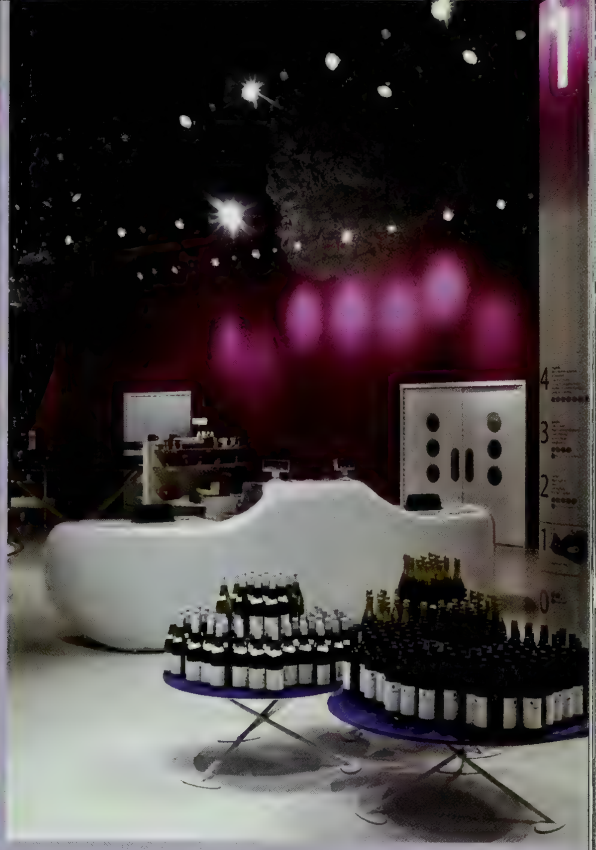
The memorable exterior is not pure image. It works as well because it follows the contours of the streets surrounding the site, which dates from medieval times. "The challenge with the skin was to get the curved profile done for a standard-cladding price," explained Edward Clark, the project manager for Arup. Since the exterior curved both vertically and horizontally, it couldn't be conveniently broken down into panels or "unscrolled" for conventional geometric engineering analysis. The team eventually devised a means to spray concrete over metal lath in

FUTURE SYSTEMS HAS BUILT AN ANATOMICAL TEASE: ARE THOSE OPENINGS LIPS? IS THAT TRIM MASCARA?

one-story-high ribbons. The lath was framed to arms projecting from scaffolding and hung permanently from brackets extending from beams at the floor edge. Contractors sprayed waterproofing on top of the concrete, then attached an insulating layer, and a finish skin of synthetic stucco painted what Kaplicky calls Yves Klein blue. The 15,000 anodized-aluminum disks that cover the surface—giant sequins inspired by a glittering, form-fitting Paco Rabanne dress—attach to fasteners anchored in sockets cast into the sprayed-concrete substrate. Their shiny cheerfulness protects the painted surface and disguises substrate imperfections.

The curving shop windows and entrance openings at the base also pose an anatomical tease: Are those openings lips? Eyes? Can that trim be seen as lipstick? Mascara? The shopper doesn't have to see the spangled exterior as a female form or anything else. Its tactile appeal bypasses the brain. From a distance, the fish-scaled skin looks as if it is stretched tautly over that swelling shape, rising tantalizingly out of the



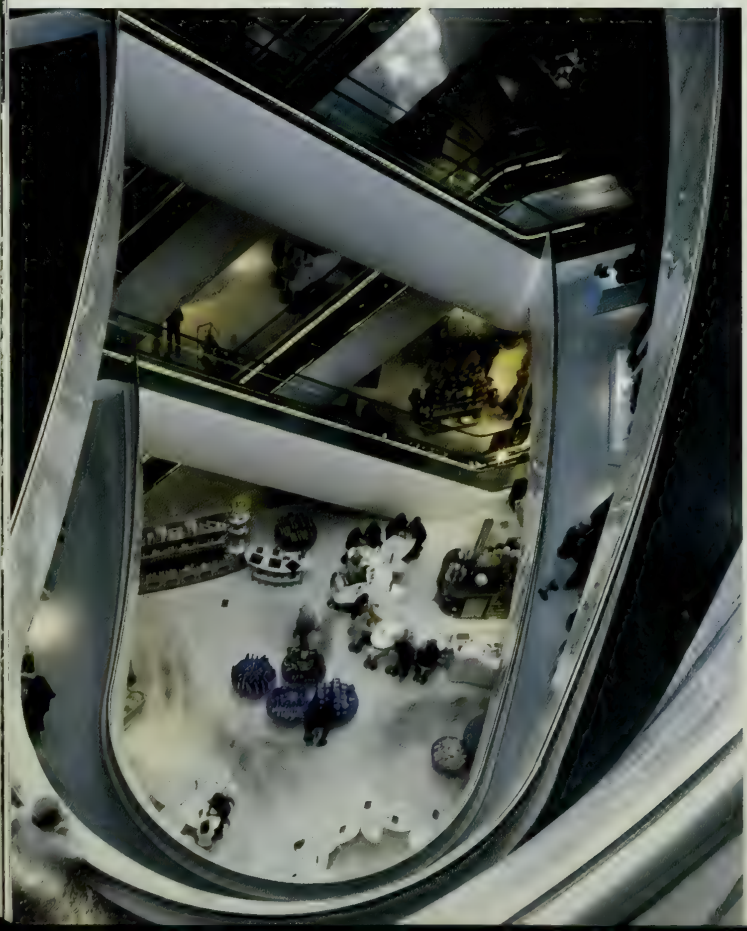




Selfridges may have the massive and amorphous floor plates of the usual mall anchor store (plans, opposite), but it eschews the rack-choked, fluorescent-lit norm. Instead, there is spatial fluidity, a techno-nightclub ambience dashed with color, and simple but artfully brash and ingratiating store fixtures.







city's prosaic dirty-brick jumble. No sign screams Selfridges.

Conventional retailing wisdom deems daylight a no-no, since it could lure buyers' eyes away from the merchandise. But Kaplicky and Levete proposed the skylighted, boomerang-shaped atrium from the beginning, and Radice understood its significance: "Orientation," said Kaplicky. "It is a key aspect of the department store." But also, "You see other people shopping, and that's important."

While the firm designed layouts for the lowest-level interiors—suspending molded-plastic space-age store fittings from the ceiling—most of the interiors are by others: Eldridge Smerin, Stanton Williams, and Cibic & Partners. Also, Selfridges rents a considerable amount of its store space to brand concessionaires. It is a testament to the chain's merchandising staff that the store personality is so distinct and so consistent in spite of the design diversity. It has traded in the conservative, polished-woodwork dignity and the labyrinthine, rack-choked floors of the old-line department store for a clean, crisp spaciousness. There's an endless inventiveness in the design of display racks and low tables, and in the theatrical use of lighting,

RADICE'S STRIPPED-DOWN DEPARTMENT STORE APPEALS THROUGH ITS FRESH, NERVY, INFORMAL YOUTHFULNESS.

which is far more appealing than the unvaried field of fluorescents that typifies the conventional department store. The large, unimpeded floor areas tend to blur the borders between brand concessions.

Overall, the spirit is unabashedly contemporary. Radice stripped down the department store to the degree that its appeal lies almost solely in its fresh, nervy, informal youthfulness. There are lots of kicky blouses and tons of T-shirts, but few ties and only name-brand business wear. Even "classic" lines like Burberry and Ralph Lauren have gone light and contemporary for this store. Furniture? Midcentury Modern, only. "It interests the 18-year-old by not being stuffy," says Kaplicky.

In the 19th century, department stores thrived as one of the few destinations women were permitted to enter unaccompanied by a man. Now men and women who work long hours have supplanted the ladies of leisure, and they have short attention spans. Radice caters to these customers by crafting the same kind of recognizable image that specialty retailers have created. Those who strongly relate to the store's contemporary feel will probably find what they're looking for. Radice's scheme leaves everyone else to competitors. That's where the risk lies, and the strategy—for all the hoopla—has yet to definitively succeed. In a tough economy for retail, Selfridges was recently reported to outperform by declining less than its competitors.

Radice himself has been lured to Marks & Spencer, where he is expected to work his magic again. A John Pawson–designed furniture store has opened. Other M&S projects are said to be in the works by Herzog & de Meuron, Ian Ritchie, and John McAslan. The Selfridges chain was sold to Wittington Investments of Canada, which cancelled Radice's plans for a store in Bristol by Toyo Ito and one by Terry Farrell in Newcastle. An extension of the London store by Foster and Partners is still planned, however. There's no major retail executive who has not paced Selfridges' linoleum floors, but the future of Radice's trailblazing vision—and the role insightful architecture can play in it—has yet to be assured. ■

Sources

Spray-on concrete: *Shotcrete*
Metal discs: *James + Taylor*
Fiberglass, glass-reinforced plaster: *Diespeker*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

PHOTOGRAPHY: 3 (BOTTOM) KEN HOWARD; OTHERS JAMES FOTHERGILL/FUTURE SYSTEMS (UNLESS OTHERWISE NOTED)

The theatrical heart of the store is the atrium, filled with the movement of people (right) and bathed in daylight (opposite, top). The atrium's generous size contravenes retail convention by depriving the store of selling space, but it pays off by offering unobstructed views to other floors (opposite, bottom), where appealing displays can lure shoppers onto the escalators. The lacquered cladding is fiberglass and glass-fiber-reinforced plaster.



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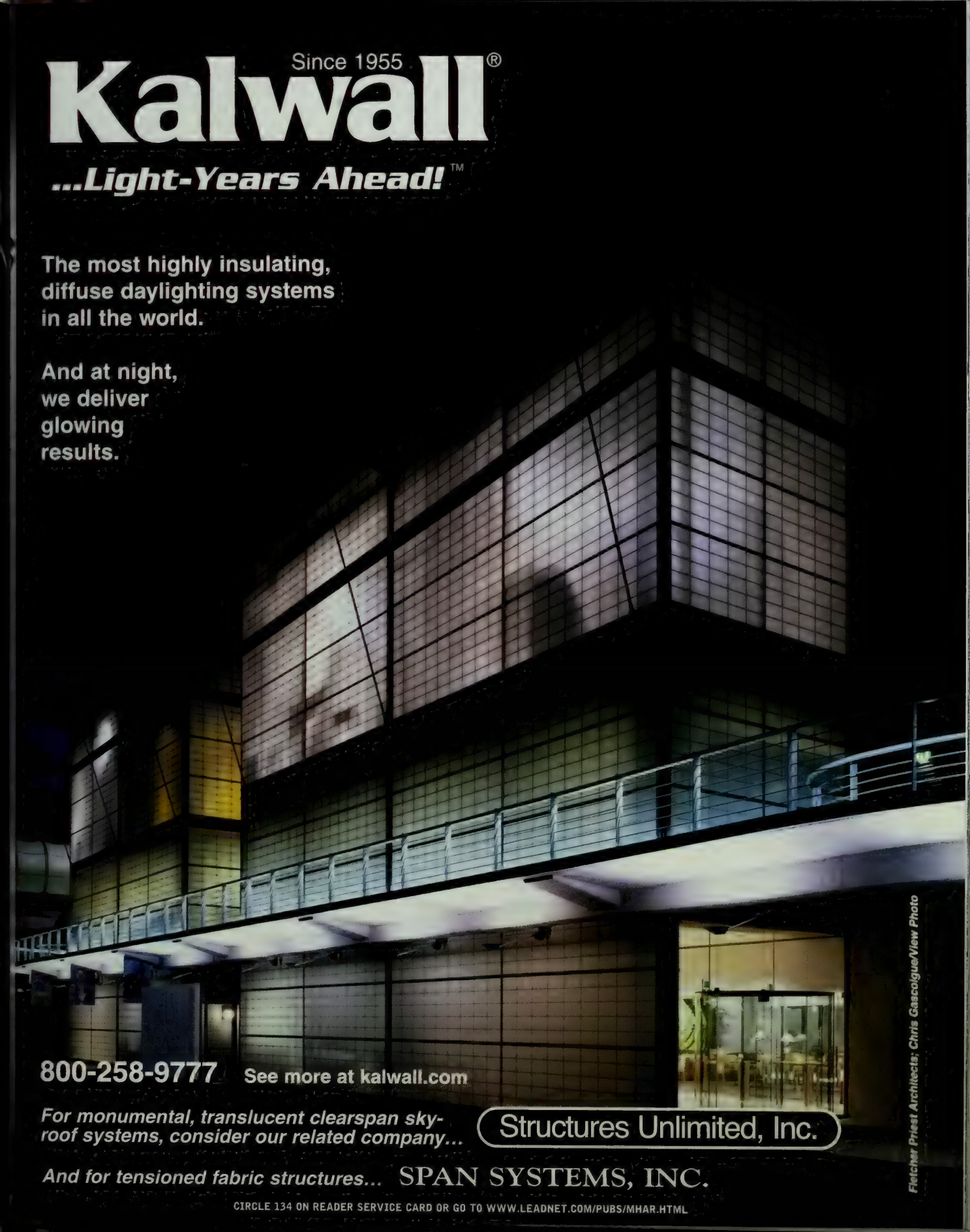
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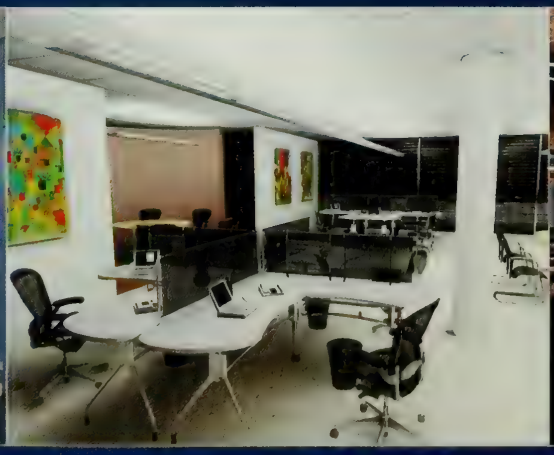
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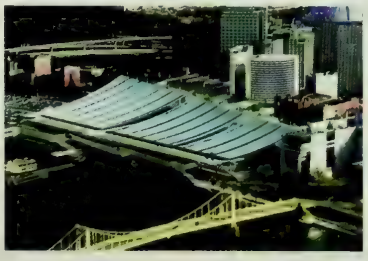


Top to bottom
1. Florida Hospital Waterman
2. Cohen Stadium
3. David L. Lawrence Convention Center

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PEDESTRIAN BRIDGES

Iconic Connections

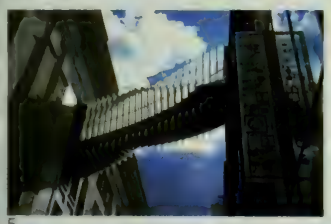
ARCHITECTS ARE PRODUCING STUNNINGLY DESIGNED BRIDGES WITH RADICALLY DIFFERENT SHAPES AND MATERIALS.


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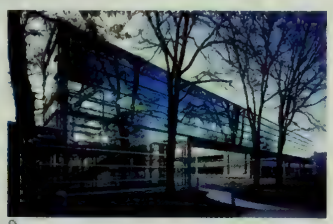

3.


4.


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6.


7.


8.

1. Webb Bridge, *Melbourne, Australia;* **2. Passerelle on the Areuse,** *Boudry, Switzerland;* **3. Puente de la Mujer,** *Puerto Madero, Buenos Aires;* **4. Memorial Bridge,** *Rijeka, Croatia;* **5. Floral Street Bridge,** *London, England;* **6. Central Street Bridge,** *Worcester, Massachusetts;* **7. Sail Bridge,** *Swansea, Wales, United Kingdom;* **8. Houghton Park Pedestrian Skyway,** *Corning, New York.*

For more information on these projects, go to Projects at **www.architecturalrecord.com.**

By Suzanne Stephens

One of the most dazzling examples of architectural form-making today is without doubt the bridge. True, the bridges of Robert Maillart have long been a staple of courses in the history of Modern architecture, as has the Brooklyn Bridge, designed by John and Washington Roebling—which Montgomery Schuyler praised in RECORD's pages a hundred years ago. Yet those bridges so admired by architects were executed by engineers. Usually, when architects have been involved in bridge design, their role has been to aestheticize the engineering, a tendency still current. However, many architects are often more involved integrally in the design, bringing a sense of scale, proportion, and elegance to spanning space. They collaborate closely with engineers or, in the case of Santiago Calatrava, are engineers as well.

Pedestrian bridges in particular have lured the architect, as seven of the eight bridges on the following pages attest. (The exception is a railroad bridge.) As Hugh Pearman points out in the introduction to *30 Bridges*, by Matthew Wells (Watson-Guptill, 2002), such bridges, intended for people on foot, cycle, or wheelchair, are designed with an eye to the particular experience of moving relatively slowly through space. This kinesthetic experience makes the most of an architect's contributions in matters of detail, use of materials, and composition of elements.

The bridges shown here serve other functions, as well. In several examples, bridges act as symbolic markers for an urban area undergoing rejuvenation or, in the case of Corning, as a gateway to a corporate complex. In one case, in Rijeka, Croatia, the bridge plays a dual role as both a war memorial and a link. Certain bridges, such as the Floral Street Bridge in London, are almost hidden in their natural or urban contexts, which makes their discovery all the more captivating.

Technical advances enable most of these bridges to be ever lighter and more evanescent, notably those designed by Santiago Calatrava and Wilkinson Eyre Architects. Others were assembled in unusual ways: The Webb Bridge in Melbourne, Australia, was floated on barges to its site, while major portions of a bridge in Boudry, Switzerland, were flown in by helicopter. (For more on the arresting technical accomplishments of certain bridges, see Building Science, page 279.)

This building type continues to proliferate, often resulting from competitions, especially in Europe, and from an ever-increasing awareness of its power to attract attention to a site. After Calatrava's first bridge in the U.S. opens in Redding, California, in July, we will be able to see how successfully this architectural form inspires additional arresting connections in the American landscape. ■

Webb Bridge
Melbourne, Australia

1 **DENTON CORKER MARSHALL AND ARTIST ROBERT OWEN SPARK UP THE DOCKLANDS WITH A SERPENTINE PEDESTRIAN AND CYCLIST BRIDGE.**

By Suzanne Stephens

Architect: *Denton Corker Marshall Architects (architects have policy of not naming team members)*
Artist: *Robert Owen*
Client: *Mirvac Corporation/ VicUrban (Melbourne's urban development agency)*
Consultants: *Arup—Peter Bowtell (structural); Arup Lighting—Paul Beale (illumination)*

Span: *361 feet*
Cost: *$1.75 million*
Completion date: *November 2002*

Sources
Steel: *Geelong Fabrications*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

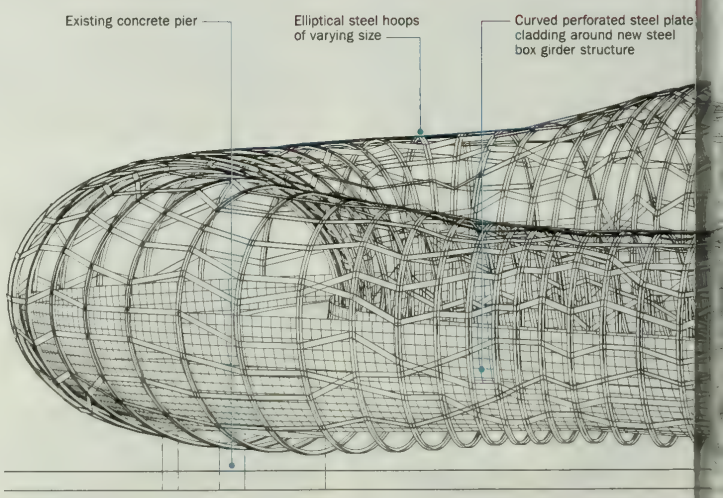
Sometimes a bridge is as much a destination as a passage. This seems to be the case with the slinky, glimmering, steel-lattice Webb Bridge in Melbourne, Australia. The pedestrian bridge, designed by artist Robert Owen with architects Denton Corker Marshall (DCM), obviously does not provide the most direct path from the Docklands on the north side of the Yarra River to new residential development taking shape on the south side. But it enhances the transit experience for bicyclists, pedestrians, and the disabled.

Program

As part of the redevelopment of Yarra's Edge, former wharves and docks near Melbourne's central business district, the Docklands Authority required the developer of the residential complex, Mirvac, to contribute 1 percent of the budget to public art. In this case, the money went for the bridge. Robert Owen, an Australian artist known for his mixed-media installations, and Denton Corker Marshall, architects of the Melbourne Museum (RECORD, January 2001, page 70), won a competition with a writhing, tubular structure that incorporates two segments of the former Webb Railroad Bridge. In addition, the design offers access to the disabled via a ramp linking higher and lower elevations without a steep incline.

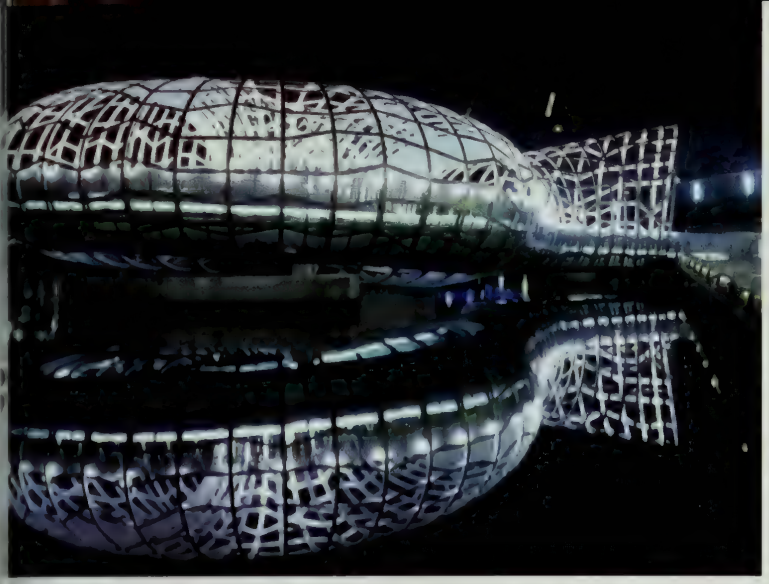
Solution

Owen's and Denton Corker Marshall's

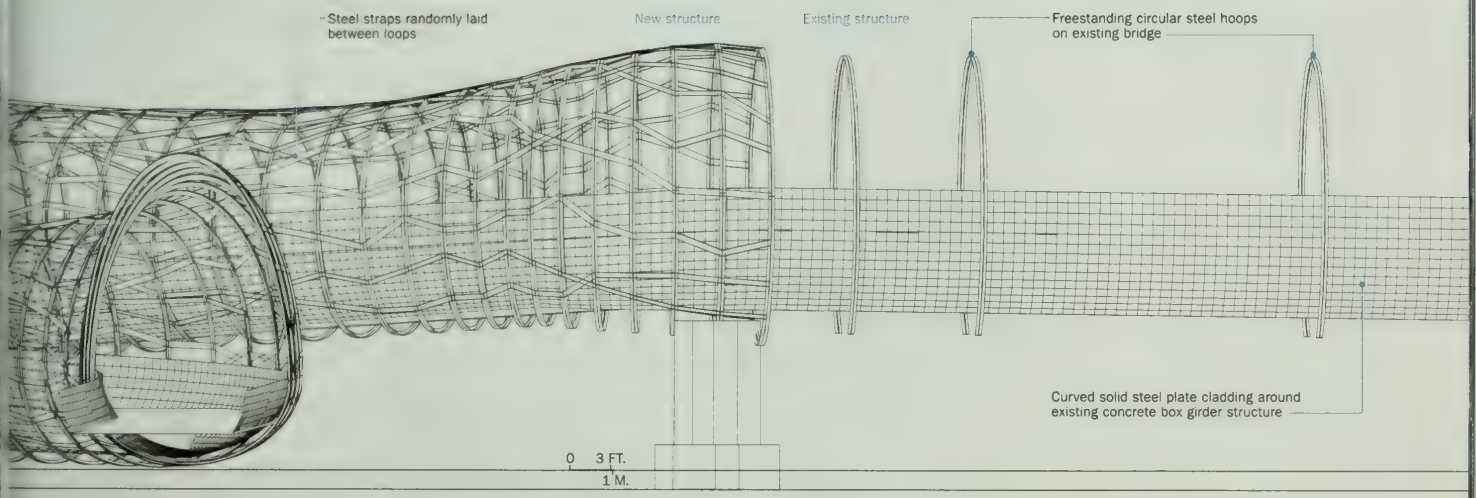


EAST ELEVATION





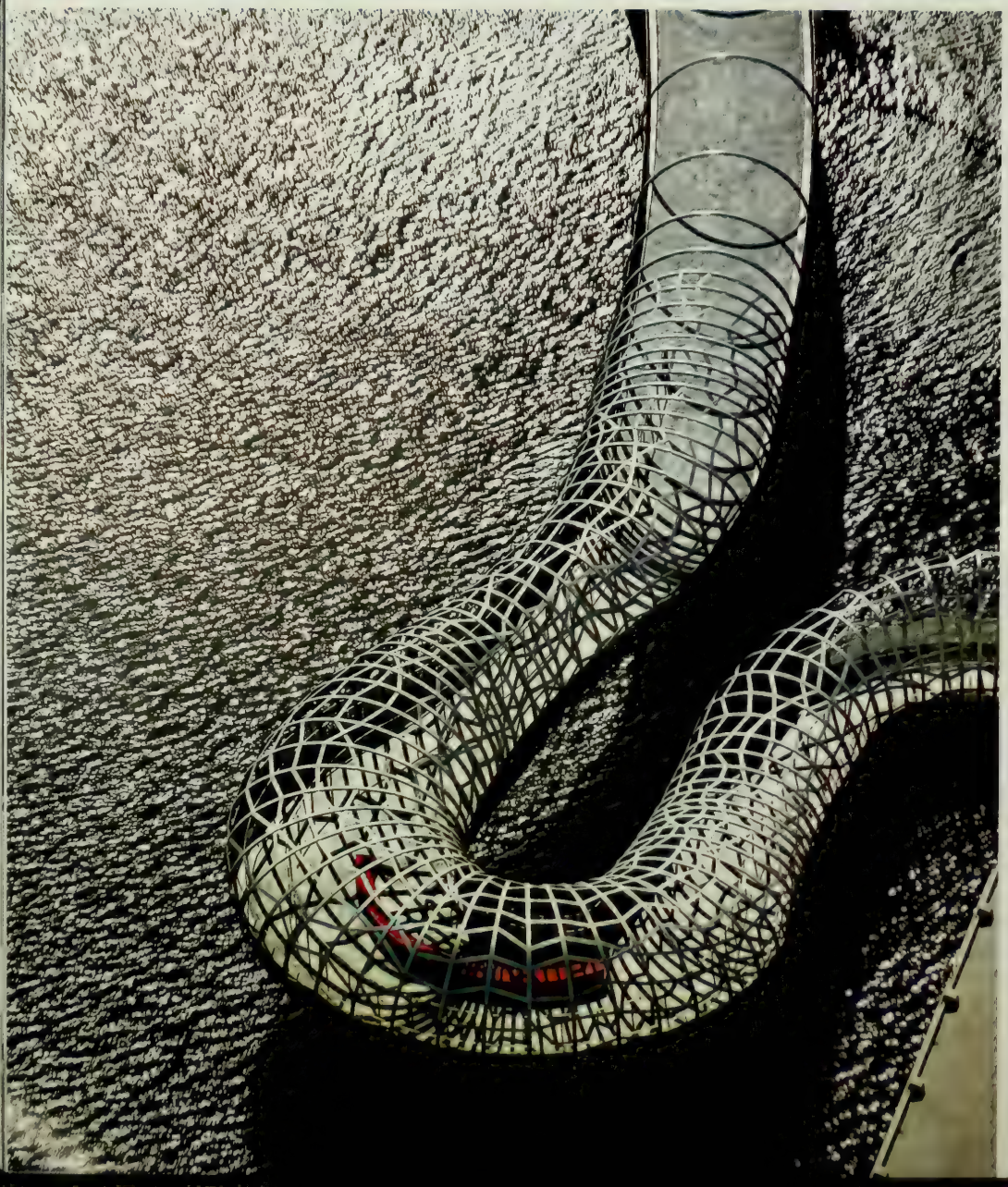






It doesn't breathe, but the Webb Bridge does come alive by night and day, when its yawning mouth disgorges visitors from the north side of the Docklands to the south side.





From afar, the elliptical hoop-frame bridge glints by day and glows by night; the tubular web takes visitors from the south entrance (opposite, top) to the north side of the Yarra River.

design recalls an aboriginal eel trap, except that it is fabricated with a hooped steel frame tied by flat, laser-cut steel straps rather than woven sticks. DCM used computer-aided three-dimensional modeling to arrive at the 20-foot-high hoops of various sizes and spacing, while the Melbourne office of Arup engineers came up with a structural solution of steel box girders, cranked to allow a curved form to take shape. The box beams, covered with a concrete slab and encased in perforated-steel cladding, and the loopy, weblike casing were fabricated on two barges in Victoria Harbor, then floated up the river and dropped into place during a low tide. The new structure was then linked with the remaining concrete box girders of the old railroad segments.

By day, the coiled bridge glints in a reptilian fashion against the Yarra River; by night, illumination conceived by Arup Lighting causes it to glitter like a silvery roped necklace reflected against a dark mirror. To create an eerily glowing atmosphere within the walkway, Arup backlighted the floor with white cold-cathode lights mounted under the side edges. To keep the light from being cast too high in the sky, it installed pairs of 35-watt, PAR30, metal-halide lights at the handrail level that bounce up against the inner surface of the arches.

Commentary

A curving bridge shared by both pedestrians and bicyclists suggests that bicyclists may have to move more slowly than they may like. Nevertheless, the biomorphic shape presents a symbolic marker for the Docklands area, as well as a meeting place, and a memorable connection from one area to another. The collaboration between artist, architect, and engineer clearly demonstrates the vital public contribution of such arranged marriages. ■





Passerelle on the Areuse
Boudry, Switzerland

2 **GD ARCHITECTES CREATES A SINUOUS LINK IN SECTION AND PLAN TO SPAN A SMALL RIVER.**

By Sarah Amelar

Architect: *GD Architectes—Laurent Geninasca, Bernard Delefortrie, partners; Christine Perla, collaborator*
Consultants: *Chablais et Poffet (civil engineers)*

Span: *90 feet*
Cost: *$117,000*
Completion date: *April 2002*

Sources
Metal fabrication: *Steiner*
Wood fabrication: *Tschäppät*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

This heavily wooded site in western Switzerland lies so far from paved roads that architects Laurent Geninasca and Bernard Delefortrie had to prefabricate the main components of their footbridge and fly them in by helicopter. Yet the gorge's wild and remote character was exactly what their firm, GD Architectes of Neuchâtel, sought to maintain.

Program

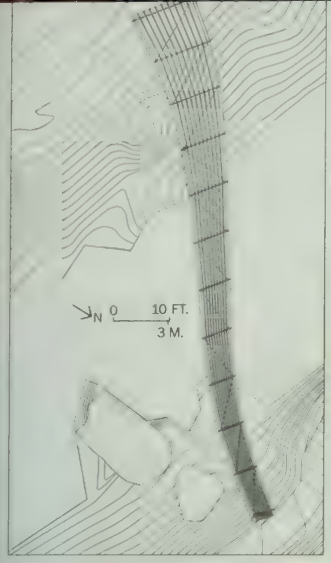
Having won an invited competition for the commission, GD Architectes had to reconcile two very different banks along the Areuse River in Boudry: one formed by steep, craggy rocks, and the other by a low, open field. The hikers' footbridge needed to span about 90 feet and arc high enough to accommodate rising water.

Solution

Working with engineer Laurent Chablais of Chablais et Poffet, the architects created a sinuous span that narrows in width, from 11.5 to 3.8 feet, and constricts sectionally as it approaches the more vertical bank. The structure, a gentle S-curve in plan and elevation, appears to emerge organically from the forest. Finely slatted with blades of dark-stained fir, the bridge's sides and top transparently screen views, rather than obstruct them. The parallel boards filter the sun's rays, much as the branches of trees cast dappled light. With the delicacy of a cricket cage, the thin wooden blades converge toward the







narrower end, intensifying the sense of curving momentum.

Deceptively simple, light, and graceful in appearance, the load-bearing, steel-framed structure—essentially a square tube—performs as a box girder, distributing bending and torsion loads through a triangulated system of wood and steel slats on all four sides, ultimately transmitting the forces to the ground at either end. To accommodate temperature variations affecting bridge length, the span's support remains fixed at its wider end and mobile at the other, where the loads would be lighter.

Given the variable section, the footbridge was designed, says Chablais, with "no two identical pieces." The act of assembling it—a logistical challenge in itself—required precise choreography. As the engineer recalls, the process started with moving two electrical lines out of the way, followed by a Tamov Russian helicopter delivering the structure's three major components on provisional scaffolding. Then, miraculously, the prefabricated footbridge was assembled in a single day.

Commentary

The exacting calculations yielded a structure remarkably harmonious with the woodland gorge. Geninasca and Delefortrie, who speak of "listening to a place," joined forces with Chablais to produce a bridge that appears both surprising and completely integral to its natural setting. ■



The curving form and converging slats, accentuated by the effects of perspective, give the bridge a gentle dynamism that remains compatible with the woodland setting and rushing water below.

Puente de la Mujer
Puerto Madero, Buenos Aires

3 **IN ARGENTINA'S CAPITAL, SANTIAGO CALATRAVA GRACEFULLY COMBINES A PIVOTING SPAN WITH A SINGLE-PYLON SUSPENSION SYSTEM.**

By Sarah Amelar

Architect/Engineer: *Santiago Calatrava*
Client: *Grupo González*
Lighting: *Santiago Calatrava*

Span: *525 feet (overall); 335 feet (rotating section)*
Cost: *$5 million*
Completion date: *December 2001*

Sources
Reinforced concrete: *Galtieri Constructions*
Steel contractor: *URSSA, Spain*
Mechanical tower: *DEMAG/ Mannesmann, Spain (supplier)*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

Though many of Santiago Calatrava's bridges—nearly 40 built so far—feature inclined pylons or arched forms, each example pushes the limits of structural ingenuity and sculptural grace in a different way. Following his innovative, harplike 1992 Alamillo Bridge in Seville, Spain, for example, this architect/engineer has repeatedly reinvented the possibilities for asymmetrical, single-pylon, cable-stayed suspension systems—most recently with his Sundial footbridge, under construction in Redding, California, and the pivoting Puente de la Mujer at Puerto Madero in Buenos Aires.

Program

In 1992, Buenos Aires launched an ambitious and strategic city-planning initiative to reclaim its neglected waterfront—focusing in part on the late-19th-century port of Puerto Madero. The city's phased plan for this district encompasses the preservation of existing warehouses and wharves; the creation of a mixed-use complex with museums, art galleries, and university facilities; and the erection of five new bridges, including the Puente de la Mujer by Calatrava. Here, he needed to span 525 feet across the Rio de la Plata, providing a pedestrian crossing and linking plazas on either embankment while retaining full access by water to a nearby dock.

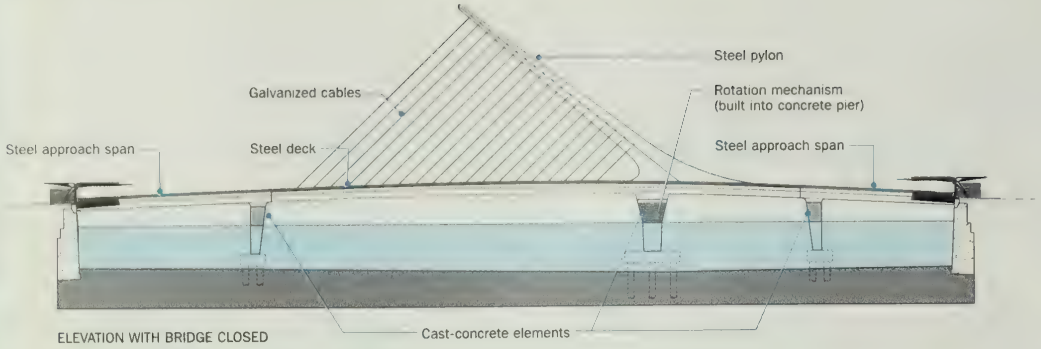


Solution

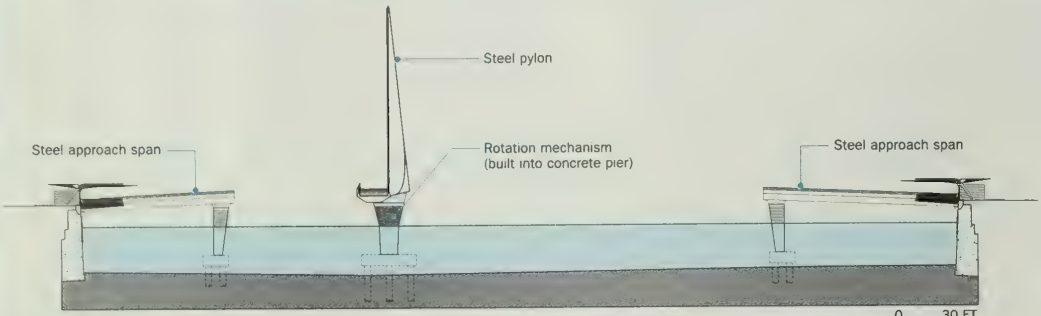
Although Calatrava has designed a wide range of kinetic structures in the past—including the Médoc Swingbridge in Bordeaux, France, and the Milwaukee Art Museum [RECORD, March 2002, page 92]—the Puente de la Mujer marks his first integration of a rotating span with an inclined, singe-pylon suspension system. Set between fixed segments, the 335-foot-long cen-



Time-lapse photography (this page) shows the bridge's potential for multiple positions as it swings open. The span provides a wood-planked crossing for pedestrians (opposite).



ELEVATION WITH BRIDGE CLOSED



ELEVATION WITH BRIDGE OPEN



tral span of the Buenos Aires bridge can turn 90 degrees to allow tall boat traffic to flow freely. Though it's rarely necessary to open this bridge—"maybe several times a year," according to the architect—he says he designed the structure "to rotate whenever it's needed, even every day."

Dynamic in its sharp, arrowlike precision, the pylon, holding taut rungs of cables, reaches a height of 128 feet. Its great triangulating V-form leads with a crescendo from the axis of a major avenue, gesturing toward the new, higher part of the city on the opposite bank. In contrast to Seville's Alamillo Bridge, where a stationary, canted-steel vertical element contains concrete to counterbalance the weight of the deck (and eliminate the need for a second set of stay cables), here, the steel pylon remains hollow, keeping it relatively light. Whereas the cable-strung V creates an obtuse angle in Seville, it forms an acute angle in the Buenos Aires structure, with concrete inserted as counterweight just behind its apex. The resulting silhouette, supporting a wood-planked pedestrian walkway, appears remarkably minimal and deceptively simple.

Commentary

Occupying a rare position in the architectural world, Calatrava has simultaneously performed as an engineer who is enlightened and an architect who builds bridges (among other structures) prolifically. In the process of revisiting this spanning form, he has managed to distill its essence, providing a clear and poetic—yet fully functional—essay on the meeting of static and dynamic forces. ■

The bridge rests on cast-concrete supports with a rotating mechanism directly below the pylon's base (left). The V-form widens toward the newer, higher part of the city (opposite, bottom and top left). The span's completely open position (opposite, top right) allows all river traffic—including tall ships—to flow freely.







Memorial Bridge
Rijeka, Croatia

4

3LHD ARCHITECTS CREATE A FORCEFULLY MINIMAL MONUMENT THAT ALSO SERVES AS A FOOTBRIDGE.

By Sarah Amelar

Architect: *3LHD—Sasa Begovic, Marko Dabrovic, Silvije Novak, Tanja Grozdanic, principals in charge; Sinisa Glusica, project architect; Koraljka Brebric, Milan Strbac, designers*
Client: *City of Rijeka*
Consultants: *Jean Wolf, Zoran Novacki, Dusan Srejic, Berislav Medic (structural engineers), Osram—Aljosa Sribar (lighting)*

Span: *123 feet*
Cost: *$1.8 million*
Completion date: *December 2001*

Sources
Aluminum planks: *Sapa, Sweden (decking)*
Cast glass: *Ciril Zlobec (prisms)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

After violent conflict in the Balkans, the Croatian town of Rijeka, some 30 miles south of Trieste, held a competition for a structure both symbolically charged and functionally efficient: a monument to Croatian defenders, a memorial to an era of death and destruction that would also serve as a footbridge. With a strikingly abstract yet contemplative scheme, the Zagreb firm 3LHD won first prize.

Program

As the city continues to evolve, this pedestrian bridge/memorial will occupy an increasingly important position, connecting Rijeka's historic center with its former port, an area to the east slated to become a public park. The structure needed to span at least 123 feet across a canal. And a small plaza, or gathering area with benches, at the bridge's east end also comprised part of the program. But the greatest challenge lay in maintaining a balance between the form's utilitarian role as bridge and its commemorative qualities as monument.

Solution

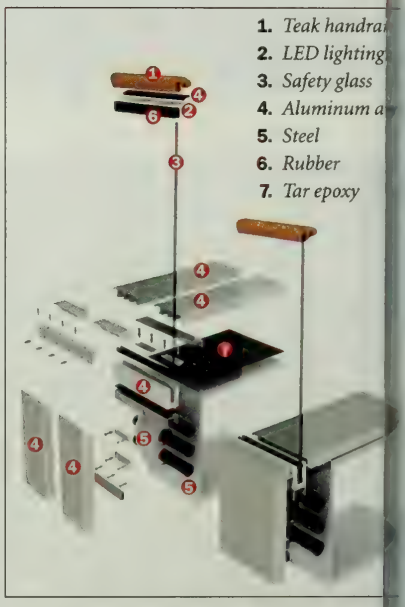
The architects devised an elegantly thin and distinctive L-configuration that equates the horizontal walking surface with the vertical slab (or memorial) in both importance and materials. The upright leg, rising 29.5 feet on the east bank of the canal, forms a wall with a slot just wide enough for the passage of one person. Reminiscent of a tombstone, the tall, geometrically pure wall confronts you, demanding that you sidestep or penetrate it, single file. Boldly blocking views, the slab prompts reflection on the nature of a place psychologically transformed. Visually, the monument's stripped-down Minimalism plays starkly against the backdrop of the old city.

3DLH gave the L-form strong continuity by covering both its legs in aluminum-alloy planks, offering a relatively nonskid surface with corrosion resistance. The horizontal component, measuring 154 by 16 feet and a mere 21.6 inches thick, features a steel girder structure, while the vertical element relies on reinforced concrete. Pilotis, also of reinforced concrete, support the walkway, edged by panels of safety glass with teak handrails.

The steel girder, fabricated in a local shipyard, arrived as a single 150-ton piece on a barge especially designed to sink down and release its cargo with changing tides. So the very act of erecting the Memorial Bridge became a major event.

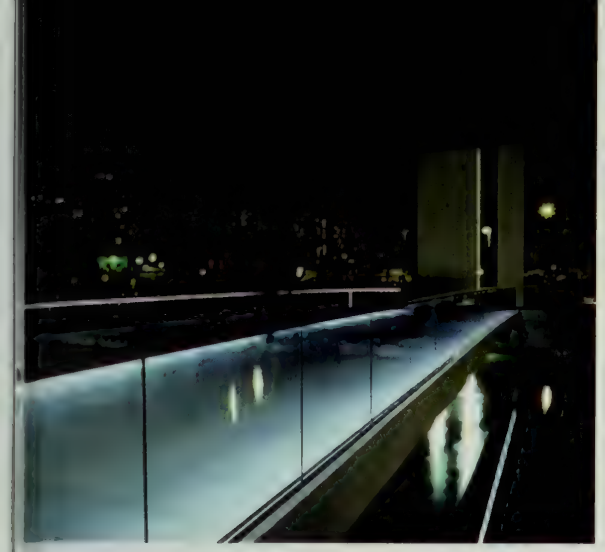
The architects enhanced the structure's floating effects and created a mystical glow at night by inserting LEDs under the handrails and behind cast-glass prisms in the edges of the upright slab.

In the plaza, cantilevered, L-shaped benches of steel and teak echo the bridge form, while a scar-like strip of crushed brick and epoxy resin, incised in the ground, extends from the wall slot—symbolizing Croatia's blood-soaked earth.



Commentary

While serving as a footbridge, this span is hardly one to hurry across. With its tall, imposing end wall, the structure encourages slow walks, contemplative lingering and gatherings, day and night. 3LHD expanded the project's scope by inviting artists from other disciplines to continue exploring concepts of memorial, patriotism, and war. From this bridge, participating artists have already launched three films and a book. ■





With abstract geometry and inventive use of LED lighting, the bridge's character evolves over the day (below) and into the night (above).

Floral Street Bridge
London, England

5 **WILKINSON EYRE HAS GIVEN COVENT GARDEN A SYMBOL OF ARTISTIC ASPIRATION LINKING THE ROYAL BALLET SCHOOL AND THE ROYAL OPERA.**

By Sara Hart

Architect: *Wilkinson Eyre Architects—Jim Eyre (director in charge); Annette von Hagen (project architect); Martin Knight*
Client: *The Royal Ballet School*
Engineers: *Flint & Neill Partnership (structural); Buro Happold (environmental)*
Consultants: *Speirs and Major (lighting); GIG Fassadenbau GmbH (bridge subcontractor)*
General contractor: *Benson Limited*

Span: *31 feet*
Cost: *$1.42 million*
Completion date: *March 2003*

Sources
Lighting: *AcDc Lighting (LED units); Design Architectural Lighting (low-voltage downlights)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

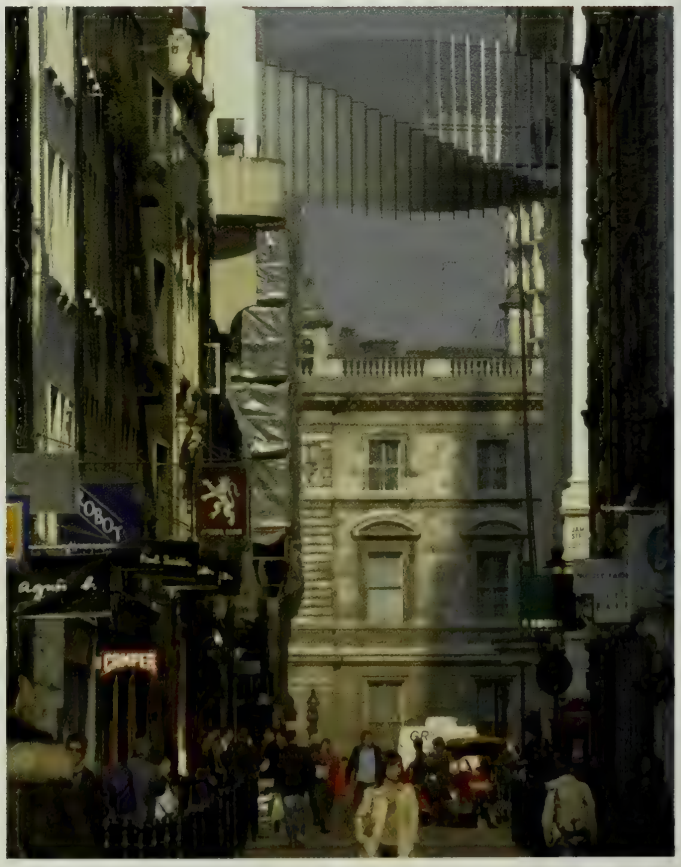
In spite of its diverse practice, London-based Wilkinson Eyre Architects has solidified its reputation internationally as a designer of spectacular bridges. Its Floral Street Bridge at Covent Garden is a fraction of the scale of its award-winning Gateshead Millennium Bridge spanning the Tyne River, but just as powerful.

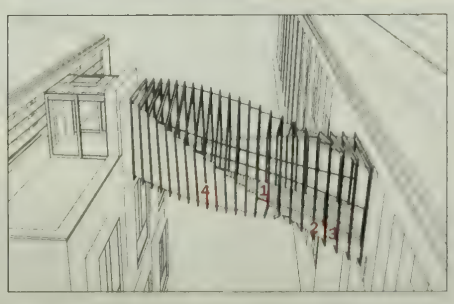
Program

Because the bridge spans a mere 30 feet across an unassuming street in London's Covent Garden, one would assume that the program would call for a modest functional footbridge connecting the back sides of two buildings. But these aren't just any buildings. Floral Street separates the Royal Ballet School from the landmark Royal Opera House. Ballet students, faculty, and staff of the school needed a direct link to the stage of the opera house. The client wanted a strong architectural statement—one that would provide an integrated link between the buildings while giving Floral Street a prominent identity.

Solution

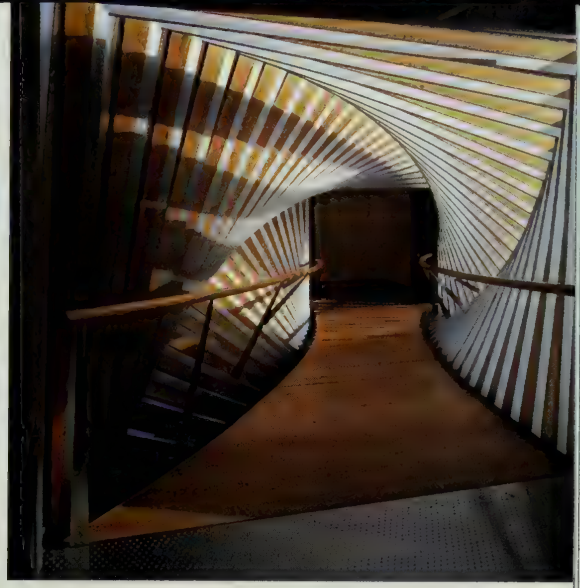
The openings between the buildings are not aligned, making a straightforward orthogonal resolution seem like a jerry-rigged collision between two architecturally distinct structures. To avoid that trap, Wilkinson Eyre conceived a deceptively simple, yet





1. *Timber deck*
2. *Aluminum sections*
3. *Structural spine*
4. *Opaque glazing*





Created out of aluminum, glass, and wood, the footbridge, in the form of a concertina, twists from one facade to the other, becoming more sculpture than architecture.



immediately legible design. An aluminum spine beam supports a timber deck and a series of square aluminum hoops. Between the openings, each hoop rotates 4 degrees relative to its neighbor and shifts in plan to accommodate the skewed alignment of the facade openings. The whole structure twists a quarter turn from one end to the other.

A structure as pure as this one created a challenge for the lighting designers. With no soffit in which fixtures could be mounted, the lighting team had to find other locations. The solution incorporates LEDs in an L-shaped form attached to the top corners of the hoops. As a result, the bridge glows gently in the darkness without blurring the details of the delicate spiral.

Commentary

By taking the form of a concertina and twisting it, Wilkinson Eyre blended structural and architectural geometries into a single unit. Motion appears to be frozen into an abstract, yet palpable, symbol for the ballet school. It literally marks the passage from the practice studios and classrooms to the stage, which is why it's informally know as the "Bridge of Aspiration." ■

Central Street Bridge
Worcester, Massachusetts

6 **CENTERBROOK ARCHITECTS CONQUERS GRIDLOCK AND CAPTURES THE SPIRIT OF INVENTION IN A NEW RAILROAD BRIDGE.**

By Nick Olsen

Architect: *Centerbrook Architects and Planners—William H. Grover, FAIA, James C. Childress, principals in charge; Padraic H. Ryan, Roger U. Williams, AIA, Michelle R. Lafoe, Jonathan G. Parks, project team*
Client: *Worcester Redevelopment Authority and the City of Worcester, Mass.*
Consultants: *Maquire Group Connecticut (engineering); Warfel Schrager Architectural Lighting (lighting)*

Span: *178 feet*
Cost: *$4.5 million (bridge only)*
Completion date: *October 1999*

Sources
Brick: *Endicott Clay Products*
Stainless steel: *The Henry Group*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

Home to Robert Goddard, the inventor of the rocket, the city of Worcester, Massachusetts, also lays claim to breakthroughs as diverse as the Valentine's Day card and the birth control pill. When faced with a problematic railroad crossing on Central Street, its main vehicular artery, the city sought a solution that would reflect its inventive character.

Program

In recent years, new developments along Central Street, including a civic center and hospital, have brought additional congestion to this busy main corridor, which connects to Interstate 290. The prior on-grade railroad crossing created a traffic nightmare, effectively blocking access to the city with each passing train. Following a master plan by Alex Krieger of Chan Krieger & Associates, Cambridge, Massachusetts, city officials decided to lower the road, raise the tracks, and erect a railroad overpass. This was to be no ordinary work of infrastructure, however. On Krieger's recommendation, local officials enlisted Centerbrook to stretch a limited budget and make a statement about Wooster's rich past and promising future.

Solution

The formal expression of such a statement sparked contention in the community. Centerbrook architects William H. Grover and James C. Childress designed more than eighty



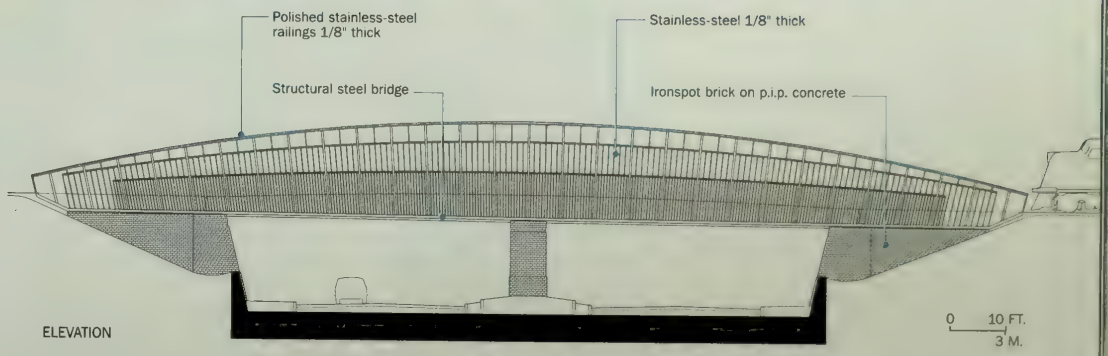
proposals, some appeasingly traditional in style, and each reflecting Worcester's many inventions. Ultimately, a modern expression of a historic novelty prevailed: The winning bridge design takes its inspiration from the calliope, a steam pipe organ developed in the city in the 1850s. The bridge, which spans 178 feet, features broad arches of gleaming stainless steel with radial supports accompanying the traditional safety railings. The steel matrix imitates the alignment of the calliope's pipes and creates a graduated screen for the city that contrasts sharply with the brick-clad reinforced concrete piers and the abutments emerging from surrounding earth berms. The steel railings feature three different levels of polish to vary their reflective sheen. At night, a kaleidoscopic play of stoplights and signs against the metal heightens the effect, hinting at the energy of the city ahead. In fact, the railing structure was constructed on the flat ground of Greenville, Texas, disassembled, and shipped piece-

At night, traffic lights and signage bring the polished stainless steel to life (below). The new bridge eliminates a difficult on-grade crossing.

meal to Worcester—ironic for a bridge so emblematic of its setting.

Commentary

Going beyond their charge to "decorate a railroad bridge," Grover and Childress mined Worcester's history for a distinctly forward-looking design. Departing from the monolithic presence of most railroad overpasses, the bridge's glittering steel web alludes to the speed of transportation and offers an appropriate gateway to a city of innovation. ■



Sail Bridge
Swansea, Wales, United Kingdom

7

WILKINSON EYRE'S SAIL BRIDGE SIGNALS TO ALL COMERS THAT THIS PORT CITY IS IN THE MIDST OF AN ENERGETIC ECONOMIC REVIVAL.

By Charles Linn, FAIA

Architect: *Wilkinson Eyre Architects—Jim Eyre, Martin Knight, Ben Addy*
Client: *Welsh Development Agency*
Consultants: *Flint & Neill Partnership (structural engineering)*
General contractor: *Balfour Beatty Construction*

Span: *465 feet*
Cost: *$5,300,000*
Completion date: *June 2003*

Sources
Cable-stayed, steel superstructure: *Rowecord Engineering*

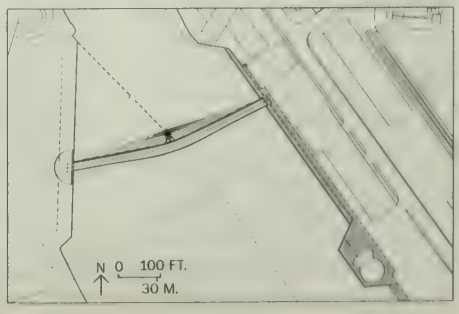


Swansea's Port Tawe industrial waterfront district is not unlike those in countless port cities throughout the world. Over the past century its shipping and heavy industries became redundant and fell into obsolescence. But this city on the Bristol Channel in southwest Wales is in some ways more fortunate than many others. The British government's Welsh Development Agency (WDA) master planned the area and invested millions of pounds in its redevelopment. It commissioned the Sail Bridge, a pedestrian link spanning the Tawe River and connecting the new Port Tawe Innovation Village with Swansea's business district, as a symbol of the area's revival.

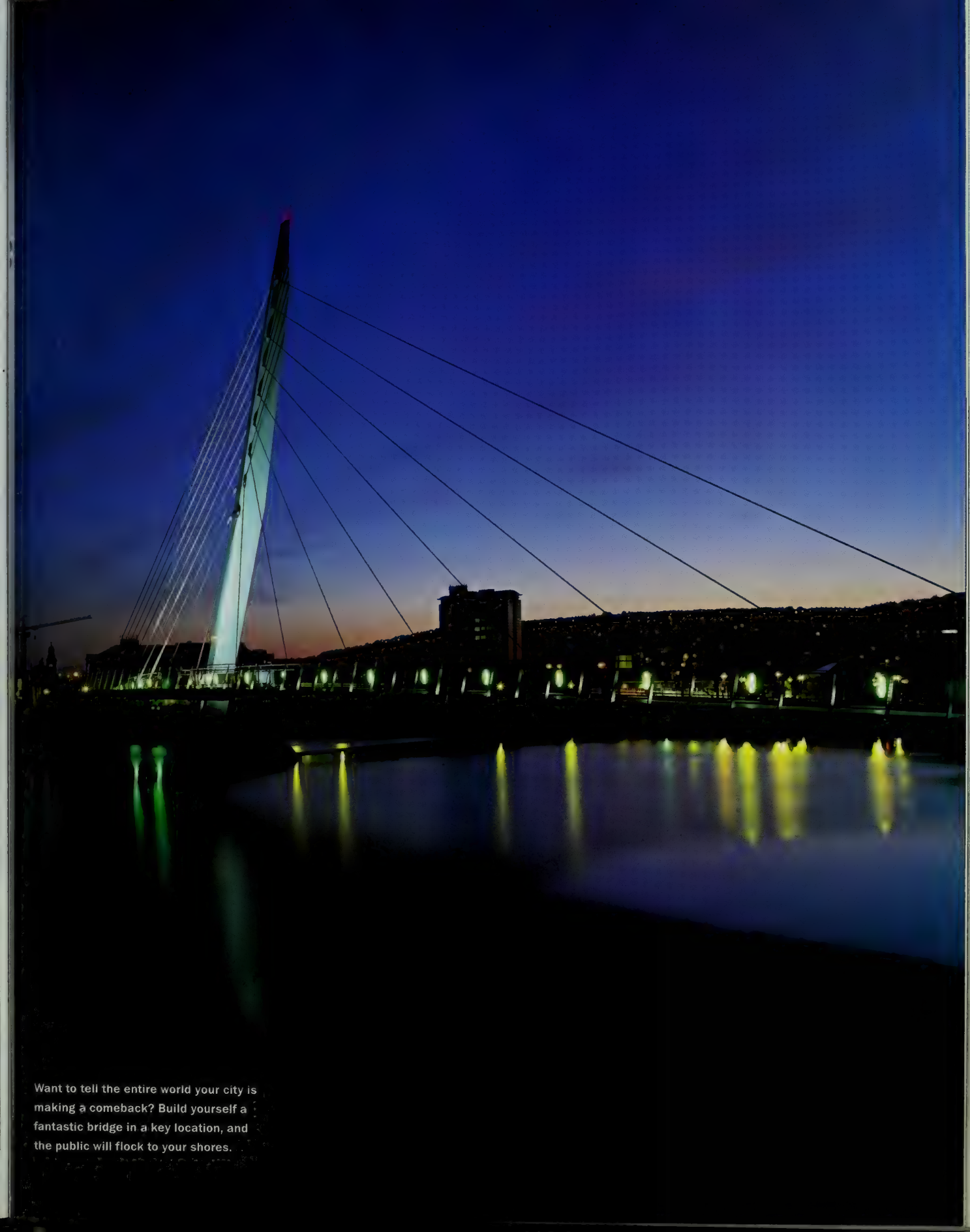
Program

The purpose of the WDA's redevelopment project at Swansea was to attract businesses at a reasonable price. Yet considering that the area was in need of costly improvements to its infrastructure, one might think the $5 million spent on the bridge would have been better put into sewers and power lines. But those work pretty much the same way everywhere—they don't give one city a substantial advantage over the next. That demands marketing.

A marketing plan intended to show off a redevelopment should include a grand gesture, something to turn the heads of prospective tenants and investors and distinguish a particular place from all others. For a city like Swansea, which has a notable past, such a focal point might display some element of that tradition while still showing that progress is the rule



For more information on this project, go to Projects at **www.architecturalrecord.com**.



Want to tell the entire world your city is making a comeback? Build yourself a fantastic bridge in a key location, and the public will flock to your shores.



Appearing to levitate, the curved bridge deck never touches the cable-stay mast. Tuned mass dampers prevent it from vibrating.

of the day, and the future is bright. Now, what if that symbol could itself be a crucial piece of infrastructure?

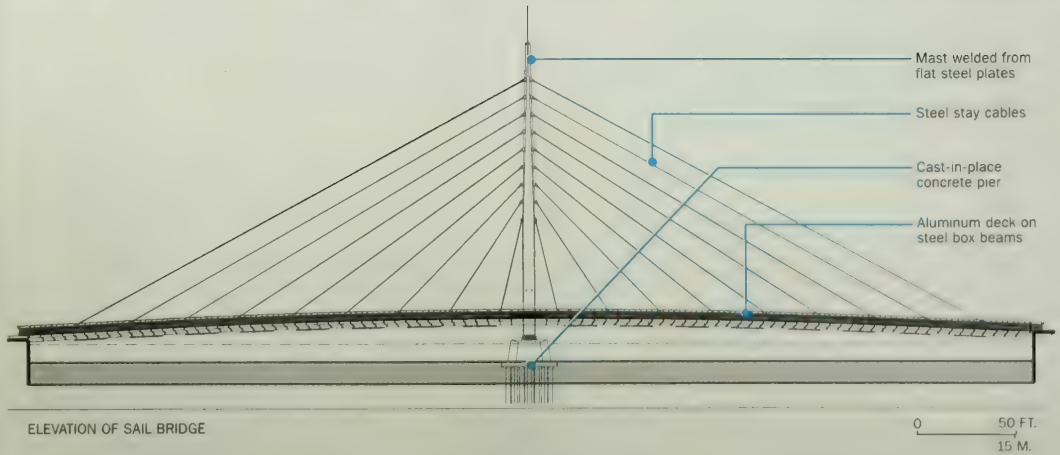
Solution

In Swansea, the grand gesture is the Sail Bridge. Wilkinson Eyre, a London-based architecture firm, was selected for the project based on the strength of its preliminary design, a cable-stayed bridge that departs from conventional designs in several ways. Instead of creating a straight point-to-point span across the river, the deck curves gently around the mast (see plan, page 264). The 131-foot-tall tower leans toward the water at a significant angle, counterbalancing the deck in much the same way that a sailboat in the wind is kept from overturning by the weight in its keel. The bridge's sculptural shape, along with its semiradially fanned stay cables, gives it its distinctive maritime character.

The aluminum-topped deck sections are slender steel box girders designed to resist the torsional forces that develop as a result of the placement of the cables on only one side of the deck. Tuned mass dampers keep the deck from vibrating under repetitive impact loads, such as those that might occur when joggers cross the bridge.

Commentary

Architects often wish for an algorithm that can show clients that the return on investment for an exceptional, but perhaps costly, structure will be much greater than something plain that can perform the job equally well. Unfortunately, though the power of certain objects to attract people is very real, at the moment their return on investment can't be quantified. Clients and the public are extremely lucky when exceptional architects can persuade them that even if a job is only a footbridge, it will be there a long time—and that the grand gesture is worth the money. ■



ELEVATION OF SAIL BRIDGE



Houghton Park Pedestrian Skyway
Corning, New York

8

HASCUP/LORENZINI REVIVES THE SPIRIT OF THE BAUHAUS WITH AN ENCLOSED GLASS BRIDGE AND VISITORS' PAVILION FOR THE CORNING COMPANY.

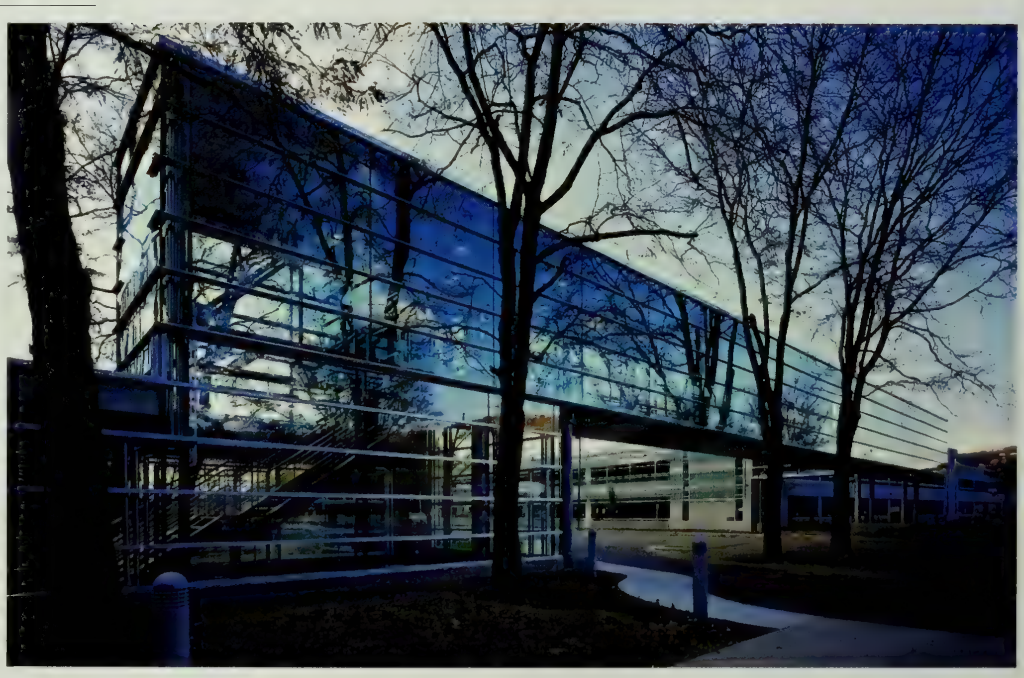
By Suzanne Stephens

Architect: *Hascup/Lorenzini Associates—George Hascup, principal in charge of design; David Lorenzini, principal and project architect; Robert Manchester, Edsel Ramirez, designers; Jeremiah Fairbank, CADD designer*
Client: *Corning Incorporated*
Consultants: *Delta Engineers (m/e/p for skyway); Thomas Associates (m/e/p for visitor's pavilion); SureSpan Group (structural for bridge truss); Greg Dende (structural for visitors' pavilion); Amy Nettleton (landscape design for skyway); Trowbridge & Wolf (landscape architects for parking pavilion)*

Span: *200 feet*
Cost: *$3.5 million (skyway); $2.2 million (visitors' pavilion)*
Completion date: *May 2003*

Sources
Steel bridge truss: *SureSpan Group*
Glass and metal curtain wall: *Clayton B. Obersheimer*
Metal roofing and stainless-steel perforated ceiling panels: *AccuFab*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

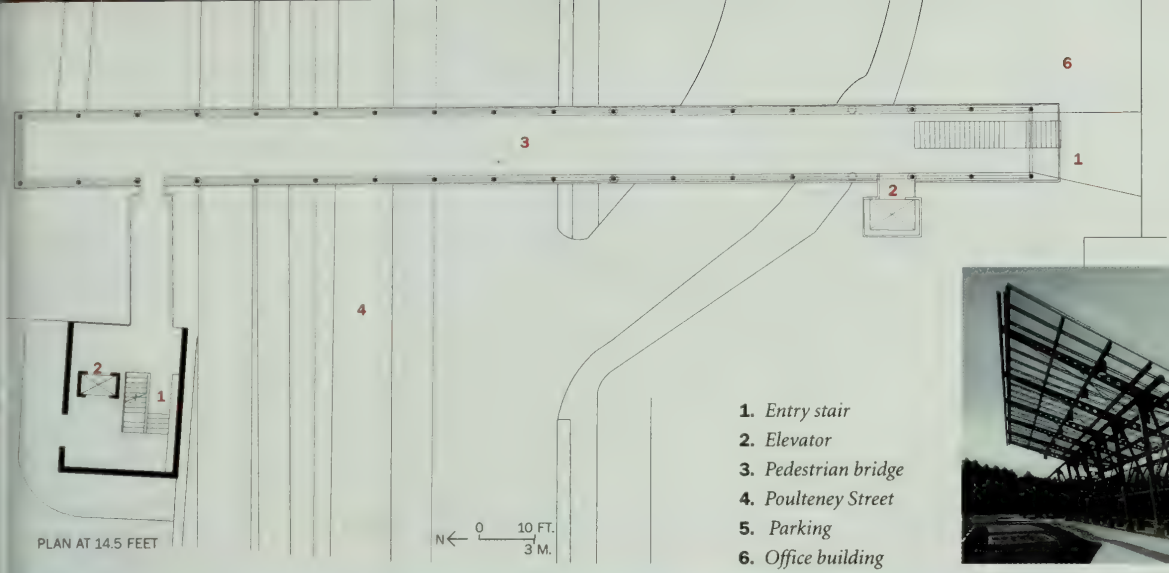


One doesn't usually expect a covered bridge to be made of glass. Unless it belongs to Corning Incorporated: Glass has been integral to the architectural identity of this company, located in upstate New York, since Harrison & Abramovitz designed the Corning Glass Center and Administrative Building in 1950–53. Then Corning bolstered the image with a glass museum by Gunnar Birkerts (1976), plus additional expansions by Smith-Miller Hawkinson (1992–2001), and even a headquarters complex across the Chemung River by Kevin Roche John Dinkeloo and Associates (1993 and 1999). As the latest installment, Hascup/Lorenzini Associates (now George Hascup Associates and David Lorenzini Associates) designed a pedestrian bridge and a visitors' pavilion as part of the 5-acre Houghton Park, adjacent to the original complex.

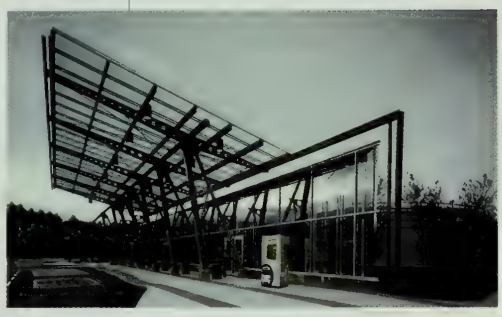
Ironically, however, the glass used in the bridge is not made by Corning. The company once known as Corning Glass Works no longer produces architectural glass, having directed its interests to high-tech areas such as telecommunications components, ophthalmic products, and high-performance glass for television and information display. Only Steuben, renowned for its hand-blown-glass luxury objects, still has a factory at this location.

Program

Because of the influx of museum visitors in addition to Corning personnel, the company needed a 200-foot-long bridge to take pedestrians from a 700-car garage and a parking lot for a 1,000 cars across the main boulevard, Poulteney Street, into the Corning campus. Cold, icy weather half the year called for an enclosed bridge. In addition, the company wanted to



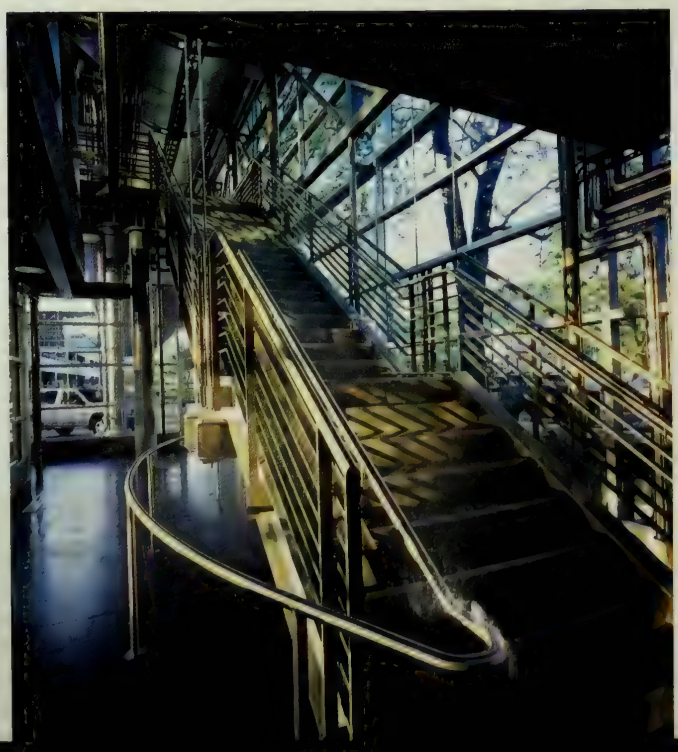
1. *Entry stair*
2. *Elevator*
3. *Pedestrian bridge*
4. *Poulteney Street*
5. *Parking*
6. *Office building*



The glass canopy of the visitors' pavilion (above) shelters a triangular glass structure attached to a round concrete bathroom core. The skyway bridge (opposite) cantilevers at the north end (below), next to the parking garage.



The ceiling (above), on which slightly bowed, perforated-steel screens and a spine of crystal louvers are mounted, adds to the luminous effect of the elevated bridge. The long stair (right), with well-proportioned pipe rails and flat balustrade rails, creates a grand entrance at the south end, where the bridge connects to Corning's office buildings.



have a 4,500-square-foot visitors' pavilion to provide orientation, service facilities, and a shuttle stop for the Roche Dinkeloo–designed headquarters. It turned to George Hascup, a professor of architecture at Cornell University, to provide the clean, modern lines displayed in his firm's Lake Source Cooling Pump Facility for the university (2002).

Solution

The 3,600-square-foot elongated structure is composed of an 11-foot-square Vierendeel truss, the largest size that could accommodate pedestrians yet still be trucked from the factory in West Vancouver, Canada. Horizontal mullions of the curtain wall further reinforce the long linear thrust of the bridge, which is cantilevered in true Bauhaus fashion at one end.

The interior of the 200-foot-long walkway is made more dramatic through the installation of shimmering, perforated-steel screens on the ceiling. A spine of crystal louvers running down the middle refracts the light and emphasizes the sense of movement. "When I apprenticed with Kevin Roche and John Dinkeloo," Hascup says, "I worked on the TWA Terminal renovations at Kennedy Airport. Eero Saarinen's beautifully curved soffit in the tubular link at TWA fostered the sense of dynamism that I hoped to recreate here."

Even though the bridge is cooled and heated, the ceiling screens reduce heat gain, as do the side panels of pale green glass with a low-e coefficient. "The light green relates the bridge to other Corning buildings," Hascup says.

Commentary

While this bridge is not the awe-inspiring engineering feat of, say, long-span bridges held together with threads of steel, the pristine and elegant manipulation of glass concealing the Vierendeel truss for the bridge is impressive. The architectural contribution is particularly notable for its balance of proportions in such elements as the truss chords, gusset plates, and mullions. ■

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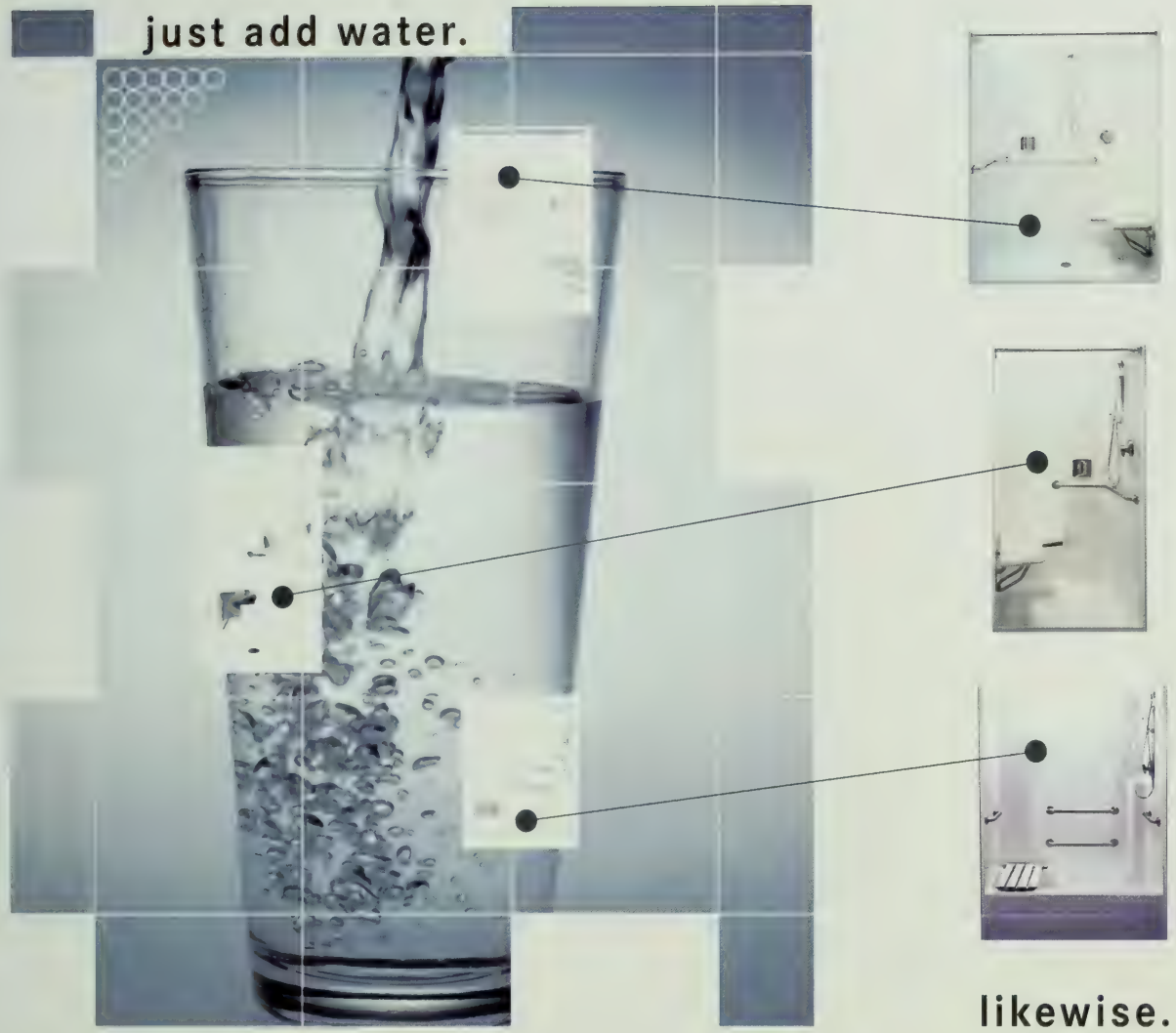
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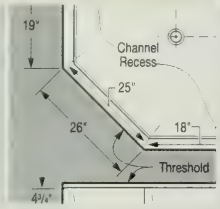
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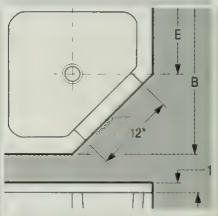
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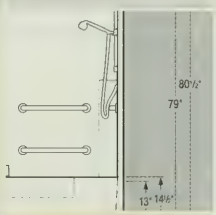
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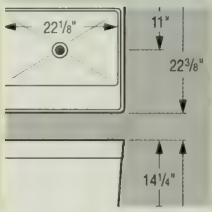
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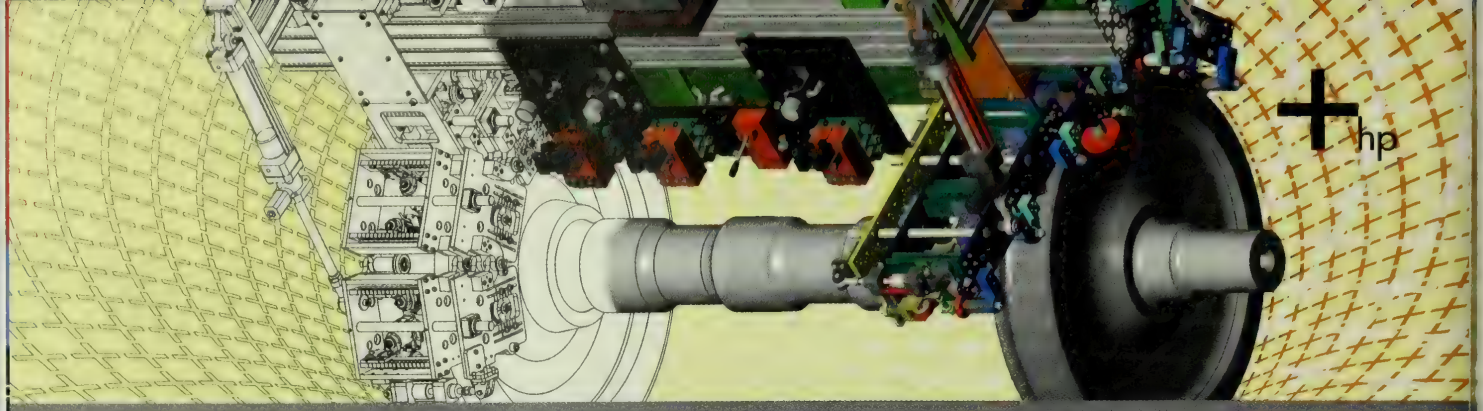
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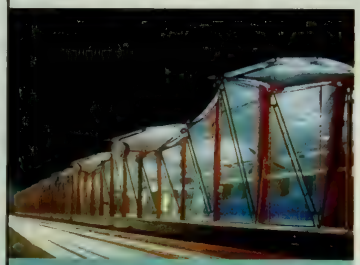
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Architectural Technology

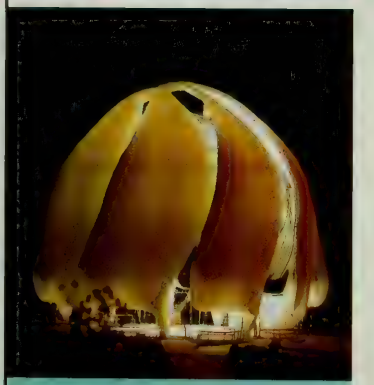
Bold results from designers who dare to collaborate, with technology as a common language

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Concrete canopies shelter passengers at a light-rail station (289).

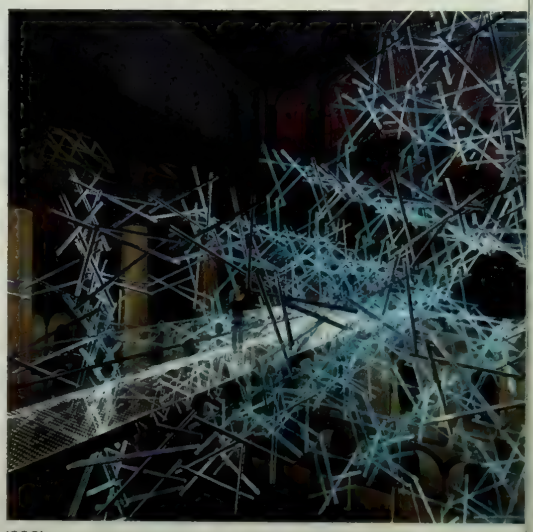


A nine-sided structure, draped in alabaster, takes shape in Chile (296).

What happens when architects and engineers team up on a design? In the stereotypical scenario, tensions run high in opposing camps. Architects decry how engineers whittle away at design intent and aesthetic quality for the sake of efficiency and budget; engineers, largely trained to analyze the efficacy of a given structure with little regard for its program or overall composition, agitate impatiently as architects ponder options for siting, form, material. Fortunately, this shopworn script has undergone a rewrite by today's best practitioners, who have jettisoned finger-pointing and assumptions about the role of each profession in favor of setting common goals from the outset of a project and staying true to them throughout its execution. Often, technology serves as the starting ground, becoming the basis for experimentation and execution.

This month we highlight the fruits of this collaboration. Bridge design, for instance, has evolved enormously with 3D CAD and advanced structural analysis for nonorthogonal forms. The pedestrian bridges shown in the Building Science feature demonstrate that, far from being simple pathways connecting disparate points, bridges can now define the void space between destinations in unique, even exuberant, ways. The feature on mass transit catalogs options for travel by means other than the beloved-yet-beleaguered passenger vehicle, and showcases transit shelters and stations whose bold forms could be emblems of an emerging trend, one that could be termed "transit density" (even freeway-centric Houston recently opened a light-rail surface transit system). Finally, in Zoom In, we examine a temple whose organic design (an exotic mushroom? a graceful sea creature?) evolved from rigorous computer modeling and analysis by an architect-engineer team in Toronto, with guidance from some technophiles in Los Angeles (we'll let you read who they are).

With projects that imply movement and motion, these designers are shaking up the status quo. *Deborah Snoonian, P.E.*



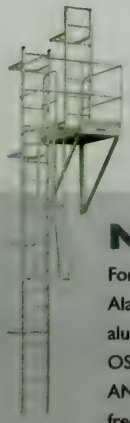
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Architects Discover Bridge Design Can Be the Perfect Union of Art and Science

ARCHITECTS AND ENGINEERS ARE TRUE COLLABORATORS IN THIS SUBSET OF ARCHITECTURE

By Sara Hart

Most bridges are seen as utilitarian instruments built to traverse an irregular terrain in a regular way. So logical is this process that most bridges can be diagrammed as a straight line announcing the shortest distance between two points. Bridges are all structure—form following function in the most literal way. And yet, despite the obvious connections to engineering, there are numerous examples that suggest bridge design is a minor subset within architectural building types, as well. When architect and engineer enter into a true collaboration, where there is design parity, the results are often stunning, as evidenced by this issue's collection of outstanding pedestrian bridges (page 247). Two of them are examined more closely here in order to demonstrate the connection between art and science.



The Floral Street Bridge in Covent Garden is a "twisted concertina" joining the Royal Ballet School with the Royal Opera House.

Arrested movement

"An enduring quality of many bridges is their sense of arrested movement," writes Jim Eyre, partner at London-based Wilkinson Eyre Architects, a firm renowned for its elegant bridges. "What can imply more movement than the graduated curves of an arch or a suspension catenary? The form of the structure is obviously important in this regard, but the sense that all of the various elements are juxtaposed in a dynamic counterpoise—where balance is only just maintained, somewhere close to the limits—is crucial, too."

Wilkinson Eyre arrested movement artfully with its Floral Street Bridge in London's Covent Garden district (page 260). The bridge connects the Royal Ballet School with the Royal Opera House. Ballet students training to attain a certain dynamic counterpoise of their own will use this walkway four floors above the street to get from the practice studio in the school to center stage at the opera house.

The bridge spans 31 feet, which is not particularly formidable as spans go. However, engineering gets more complicated when the architecture deviates from the orthogonal, as it does dramatically in this case, prompting the figurative description of the structure as a "twisted concertina."

The single structural component that governs all other elements in its construction is the box beam, also called the spine, which runs the distance between the two buildings and supports the deck surface, the secondary structure, and all other loads. Generally referred to as a "simple" beam, the eccentricities of the bridge enclosure required complex 3D modeling to solve the issue of both the slope (about 2 feet) and the rotation of the frames (about 13 feet over the span). In the final solution, the engineers ended up with a beam that is anything but simple. It is defined by thin rectangles at each end, which morph into an equilateral triangle at the center (see section, page 280).

The beam is an aluminum box made up of flat plates welded

CONTINUING EDUCATION

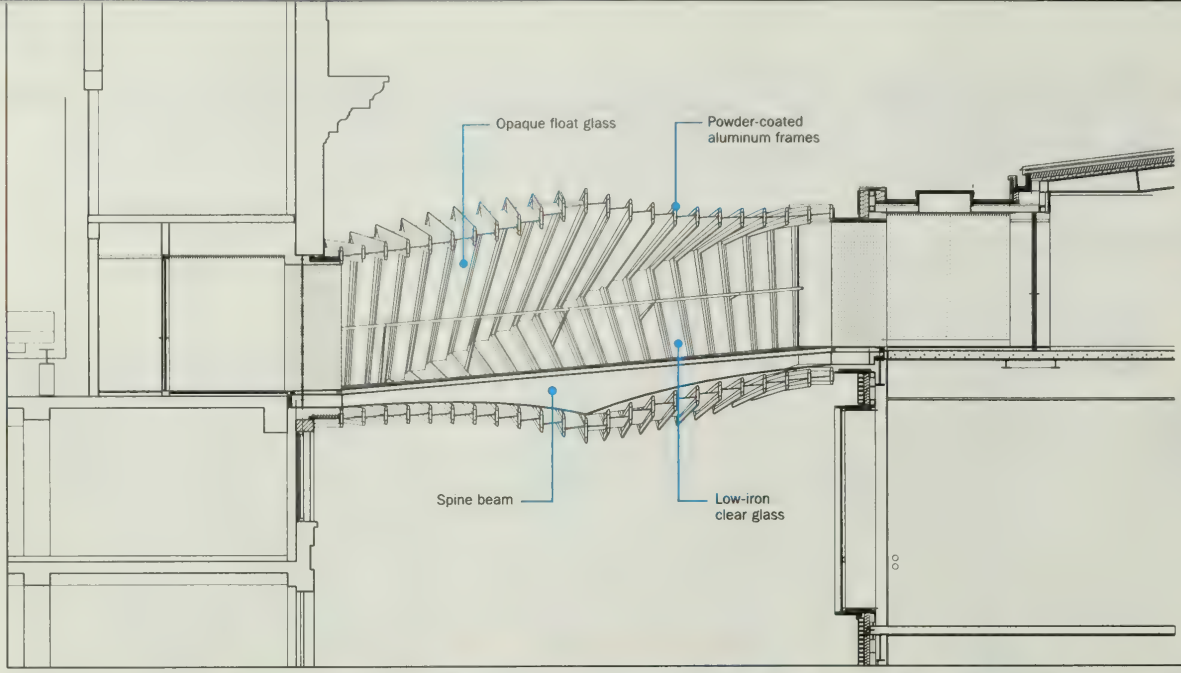
Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 286 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include the following sponsored sections: "Window Installation," sponsored by JELD-WEN, page 311; "Italian Tile," sponsored by the Italian Trade Commission, page 317; and "New Tools for Specifying Architecturally Exposed Structural Steel," sponsored by the American Institute of Steel Construction (AISC), page 323.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Discuss unusual artistic design of recent bridge projects.*
2. *Explain the concept of arrested movement.*
3. *Describe the construction of the box beam used in these bridges.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **www.architecturalrecord.com**.



The 31-foot bridge was carefully crafted in a factory and delivered to the site in one piece. Each powder-coated aluminum and wood fin is rotated about 4 degrees from the one next to it. The entire bridge is supported by a single box beam (shown in section at left).





The bridge is lit from within (far right) by LEDs mounted on brackets in the upper corners of the portals.

onto extruded sections of varying geometry, which are bolted together to form the complete beam. Before settling on aluminum, which is lightweight and durable, the design team considered other materials. Ian Firth, partner at the London-based Flint & Neill Partnership, the engineers for the project, explains, "The materials had to be lightweight, because there was a limit to the loads that could bear on either building. We considered stainless steel, which could have been thinner, because of its higher strength and stiffness, and, therefore, as light as aluminum." In the end, they rejected stainless steel along with glass-fiber-reinforced polymer, because the cost of both was considerably more than the cost of aluminum.

The beam, fabricated in Austria, was shipped to a factory in West London, where it was clad with powder-coated aluminum and timber frames, also called portals or fins, and then glazed with either opaque float glass or low-iron clear glass. The square frames are attached to the aluminum beam by pairs of simple brackets on each side of the beam. These brackets secure the bottom corners of the frame and have slots to allow thermal expansion and contraction, as well as ventilation. The glass panels are fixed between the frames using structural silicone.

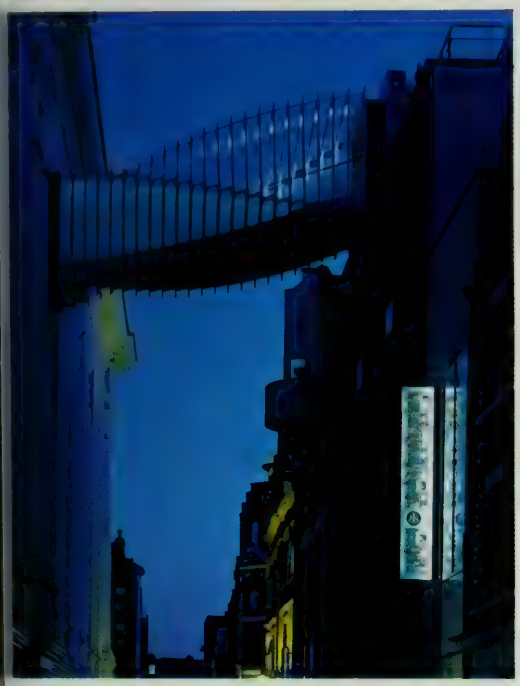
Maintenance issues were a large concern, especially considering how integrated all the components are. Because the spine supports all the elements, none of the frames is dependent on the one adjacent for support or stiffness. This means that individual frames or their glass sections can be replaced if necessary without compromising the overall structure. Early on in the design process, the team realized that achieving this operational objective, as well as ensuring stability within the frames, required that the beam be engineered to absorb live-load deflections in order to minimize movement in the frames.

"MATERIALS HAD TO BE LIGHTWEIGHT, BECAUSE THERE WAS A LIMIT TO THE LOADS THAT COULD BEAR ON EITHER BUILDING."

Factory prefabrication had two advantages. First of all, the

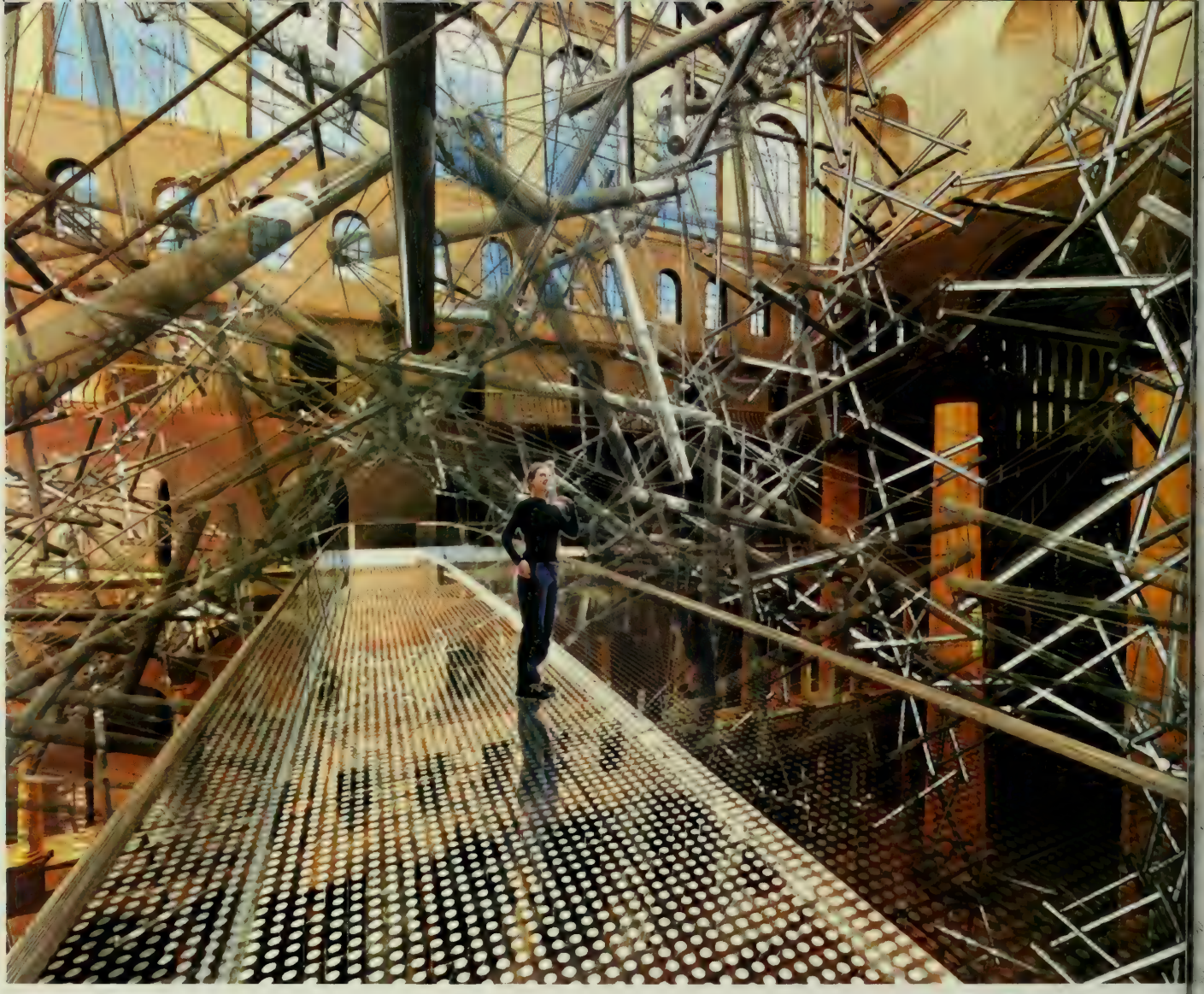


The box beam was fabricated in Austria, then shipped to a factory in West London, where the aluminum and wood fins, or portals, were attached (left and below), then glazed.









details and the connections have the craftsmanship of fine cabinetry. Secondly, the assembled bridge could be delivered to the site in one piece and installed in 2 hours, limiting disruption of a busy site in central London.

Arrested movement continues to be a theme for Wilkinson Eyre. In a project currently in development, the architects are designing

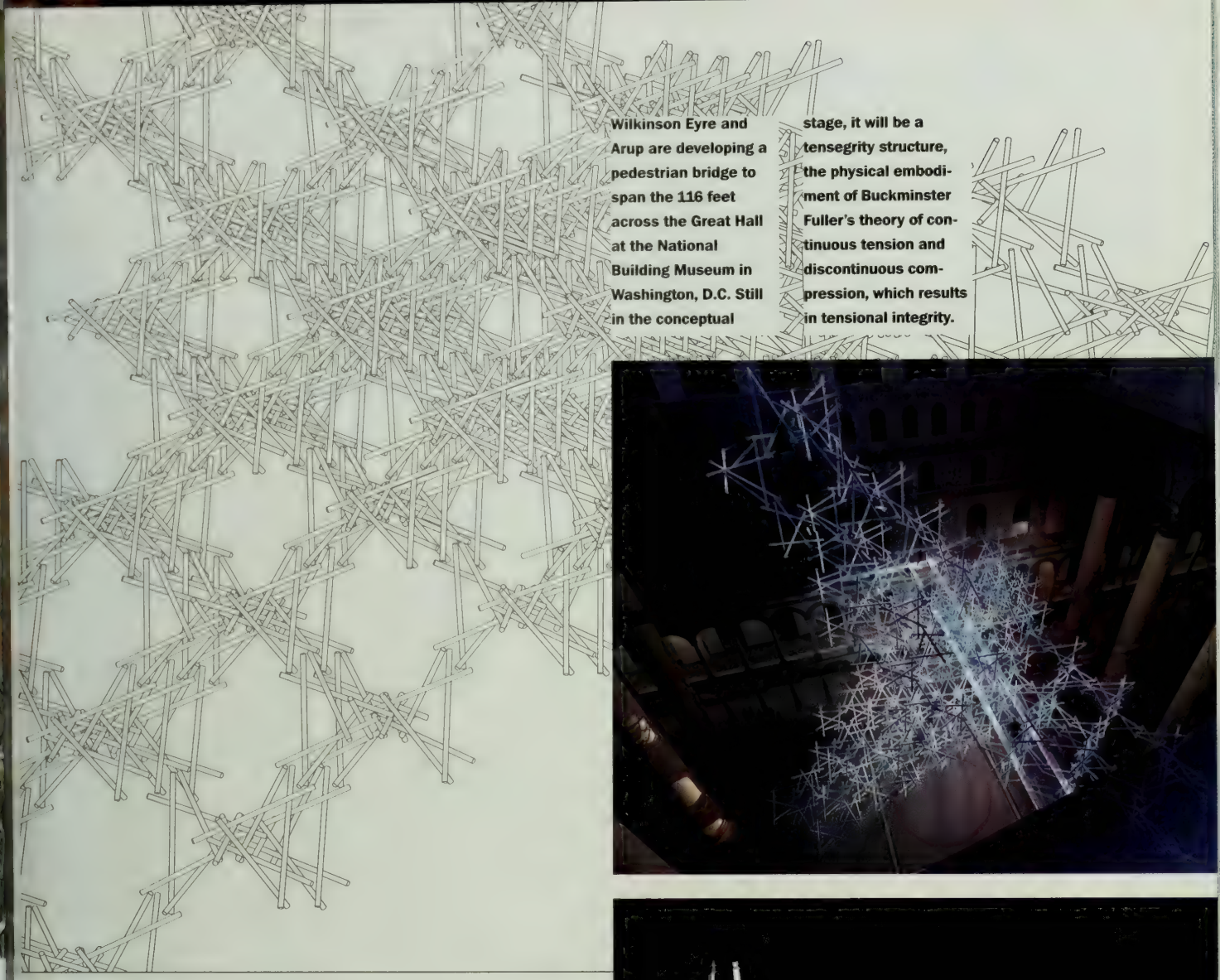
A STRUCTURE HAS TENSEGRITY IF ITS ELEMENTS ARE BALANCED IN TENSION AND COMPRESSION AND RESISTANT TO TORQUE.

a bridge to span 116 feet across the giant hall of the National Building Museum in Washington, D.C. The Advanced Geometry unit at Arup's London office is engineering the bridge as a "tensegrity" structure. Buckminster Fuller invented the term *tensegrity* to describe the structural principle behind his geodesic domes; it's the contraction of *tensional integrity*. A structure has tensegrity if its elements are balanced in tension and compression and resistant to torque. Tensegrity structures reappear from time to time, either in commercial applications [RECORD, May 2002, page 267] or in experimental ones, such as the project at the museum. At this stage, the idea is emerging as a matrix of cables and struts equipped with stress gauges, which will record live loads and send the signals to a computer, which will turn them into a pedestrian-generated light show.

Bridge over neglected waters

The Webb Bridge in the Melbourne Docklands (page 248) has a lot in common with the Floral Street Bridge a half a world away—complex geometry, off-site fabrication, the same Austrian bridge subcontractor, and a continuous box-beam structural system. It also required a serious collaboration between the architect, Denton Corker Marshall (DCM), and the engineer, Arup. Furthermore, the bridge was to incorporate fragments of an old railway bridge, abandoned in the River Yarra and no longer attached to the shore.

The Melbourne team also included artist Robert Owen, whose idea for the bridge was inspired by an eel-fishing trap, a reference to the type used by Aboriginal people who lived at the site 200 years ago. As with Floral Street, the design process began with 3D computer modeling of the



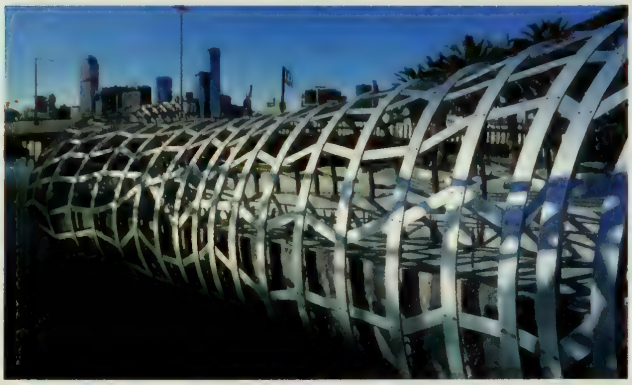
Wilkinson Eyre and Arup are developing a pedestrian bridge to span the 116 feet across the Great Hall at the National Building Museum in Washington, D.C. Still in the conceptual stage, it will be a tensegrity structure, the physical embodiment of Buckminster Fuller's theory of continuous tension and discontinuous compression, which results in tensional integrity.

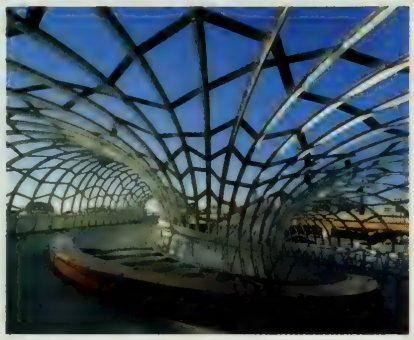


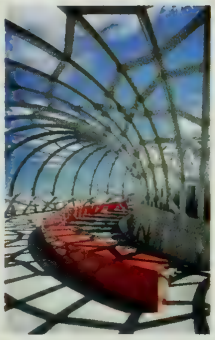
basic concept—in this case, the artist's sketch.

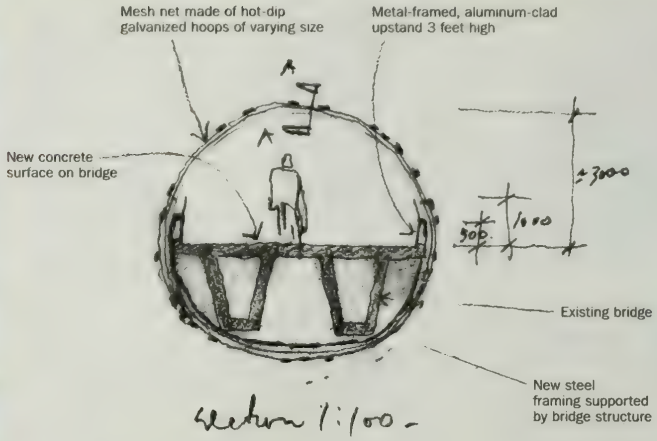
The new bridge is constructed of a concrete ramp sitting atop a steel box beam, which, in turn, rests over the existing railway bridge remains. This main structure is then enclosed by an elaborate latticework of curved, flat, laser-cut strips of steel. DCM developed the geometry using parametric modeling to determine the size and spacing of the straps and hoops that made up the open-weave design. Parametric base models are defined by simple physical parameters; the designer can change the parameters and the model updates itself automatically. This allowed the architects to explore multiple iterations rapidly until the desired effect was achieved. The data was simultaneously entered into a CAD model, which was used to locate the hoops along the ramp's path. This tool immediately confirmed clearances both internally over the ramp and externally over the high-tide water level.

The geometry of the bridge, a hairpin ramp of varying width twisting and turning in three-dimensions, enclosed with steel hoops and curved cladding of varying radii and spacings, meant that almost every component was unique. The collaboration soon expanded to include a shop-drawing specialist and a fabricator, as it became obvious that their









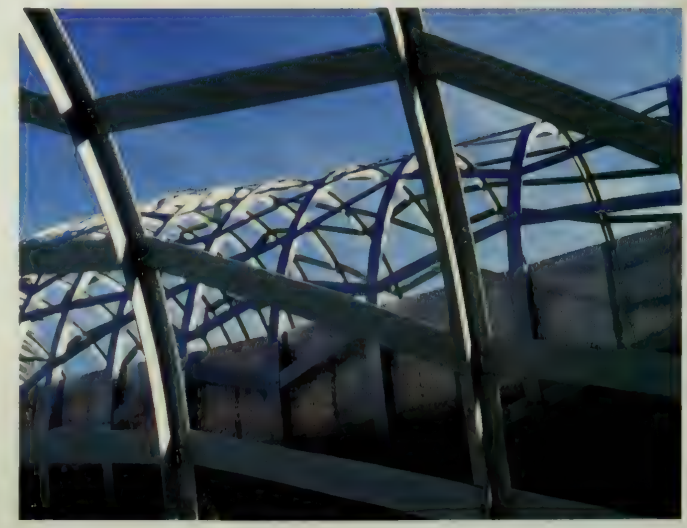
The Webb Bridge is constructed of a concrete ramp in an open-weave form of steel hoops connected by flat steel straps.

expertise would be needed from the beginning.

All team members reviewed and developed the documents through each stage, to ensure the scheme stayed within budget without diluting the design objectives. In this way, the cost of what Australians call "design-development risk" was eliminated from the process. At the same time, the team made sure the steel supplier understood the design's complexity well enough to keep prices within an acceptable range.

The 3D CAD design model was developed by DCM and passed to the fabricator and his shop-drawing specialist, Precision Design. With the close involvement of Peter Bowtell, principal in Arup's Melbourne office, the structural components were developed in three dimensions. These consisted of the large steel box girders and primary substructure, and later the hoops, straps, and cladding supports. At all times, the components were reviewed against the architect's CAD model to ensure the design envelope was not compromised and the design integrity was maintained. Individual shop drawings were created in 3D CAD and used to drive CAD-based plasma cutters.

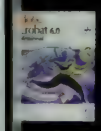
As with Floral Street, prefabrication was appealing. The steel



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The Webb Bridge was towed on a barge to the site on the River Yarra.

fabricator suggested towing the completely assembled bridge into position over water. This saved significant money on the anticipated floating-cranage costs and site-assembly time. As the project architect recalls, "It was this joint sharing of ideas and approaches that meant that everyone 'won' in the process."

Rather than ship the assembled bridge across Port Philip Bay from Geelong to Melbourne (47 miles), the design team, at the suggestion of the fabricator, decided to assemble the components at an empty quay within the Melbourne Docklands. The box girders, outrigger substructure, ramp deck, hoops, and cladding supports were assembled as a giant three-dimensional jigsaw puzzle on three connected barges. Much of the straps and all of the cladding sheets were left off at this stage.

Very early one morning during a high spring tide, the barges were slowly towed to the site by a tugboat. Because the bridge weighed hundreds of tons, coordination and precision became imperative. The barges were maneuvered into place, and as the tide dropped, the bridge lowered into position and rested on the end of the existing bridge, pier, and quayside. The window of opportunity was very small, with only a few hours to complete the process. If they hadn't secured the bridge in place that day or the next, the tides would be too low for the next several weeks. The extensive lighting facilities, steel cladding panels, handrails, concrete deck, and the remainder of the straps were subsequently installed in a few days.

Bridge design offers the architect a course in craftsmanship. As shown here, detailing bridges involves risk. Expectations of accuracy are higher than in many building types, and as a result, commonly accepted tolerances shrink out of view. Technological and computational advances notwithstanding, bridges offer architects the experience of raw discipline. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- Read the article "Architects Discover Bridge Design Can Be the Perfect Union of Art and Science" using the learning objectives provided.
- Complete the questions below, then fill in your answers (page 384).
- Fill out and submit the AIA/CES education reporting form (page 384) or download the form at www.architecturalrecord.com to receive one AIA learning unit.

QUESTIONS

1. Bridges are usually described in all of the following ways except which?
- **a.** function following form
- **b.** a straight line between two points
- **c.** a way to traverse an irregular terrain
- **d.** form following function

2. Which is the best description of Wilkinson Eyre's arrested movement?
- **a.** the graduated curves of an arch
- **b.** balance that is only just maintained
- **c.** ballet students training to attain counterpoise
- **d.** a twisted concertina

3. The deciding factor in selecting aluminum over stainless steel and glass-fiber-reinforced polymer for the Floral Street Bridge box beam was which?
- **a.** light weight
- **b.** high strength
- **c.** thinness
- **d.** low cost

4. The aluminum beam was designed to absorb live-load deflections for which reasons?
- **a.** for easy replacement of the glass sections
- **b.** to minimize movements in the frames
- **c.** to keep adjacent frames stiff
- **d.** to keep the glass sections from breaking

5. The advantages of prefabrication of the Floral Street Bridge are all of the following except which?
- **a.** high craftsmanship of the connections and details
- **b.** delivery to the site in one piece
- **c.** less disruption if a busy site
- **d.** avoid taxation by shipping from another country

6. Buckminster Fuller's term "tensegrity" is described as which?
- **a.** a combination of tension and integrity
- **b.** elements balanced in tension and compression
- **c.** resistance to torque and compression
- **d.** elements balanced in tension and compression and resistant to torque

7. Which of these elements is true for the Webb Bridge, but not for the Floral Street Bridge?
- **a.** it began with 3D computer modeling
- **b.** it was prefabricated in Austria
- **c.** it incorporates fragments of an old abandoned bridge
- **d.** they had to wait several weeks to secure the bridge into place

8. What tool allowed the architect of the Webb Bridge to explore multiple iterations rapidly?
- **a.** 3D CAD modeling
- **b.** parametric modeling
- **c.** laser cutting
- **d.** CAD-based plasma cutters

9. The "design-development risk" factor was eliminated from the Webb Bridge by what means?
- **a.** a shop drawing specialist and a fabricator were added to the design team
- **b.** the team made sure the steel supplier understood the design's complexity
- **c.** all the team members reviewed and developed the documents through each stage
- **d.** shop drawings were created in 3D CAD

10. After the Webb Bridge was towed to the site, which of the following happened?
- **a.** it was raised into place as the tide came in
- **b.** it was lowered into place as the tide went out
- **c.** the bridge was positioned onto a new bridge pier
- **d.** they had to wait several weeks to secure the bridge into place



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Mass Transportation to Get Sleek and Daring

ARCHITECTS ARE BEING CHALLENGED TO PRODUCE TRANSIT SHELTERS AND STATIONS THAT ARE AS INNOVATIVE AS THE NEW AND IMPROVED SYSTEMS OF MOVING PEOPLE AROUND THE COUNTRY

By Barbara Knecht

Strangling traffic notwithstanding, cars are still the preferred mode of transportation, especially in the U.S. And why not? Roadways are, for the most part, smooth and ubiquitous. Internet, telephone, and movies are available at the touch of a button from the comfort of your zone-climate-controlled seat. Even for many commuters who take public transit from the suburbs into the city, an automobile is required to deliver them to the bus or rail station. Americans, among citizens of the car-dependent nations, are particularly wedded to the convenience of driving, as evidenced by U.S. Department of Transportation statistics, which state that 89 percent of commuters drive to work alone.

Everyone is aware of the downside to this convenience. Besides the rising cost of gasoline, traffic congestion is a huge drain on both productivity and energy conservation. The average urban rush-hour driver spends about 62 hours a year stuck in traffic, which translates to 5.7 billion gallons of wasted fuel and a cost to the economy of $70 billion dollars annually.

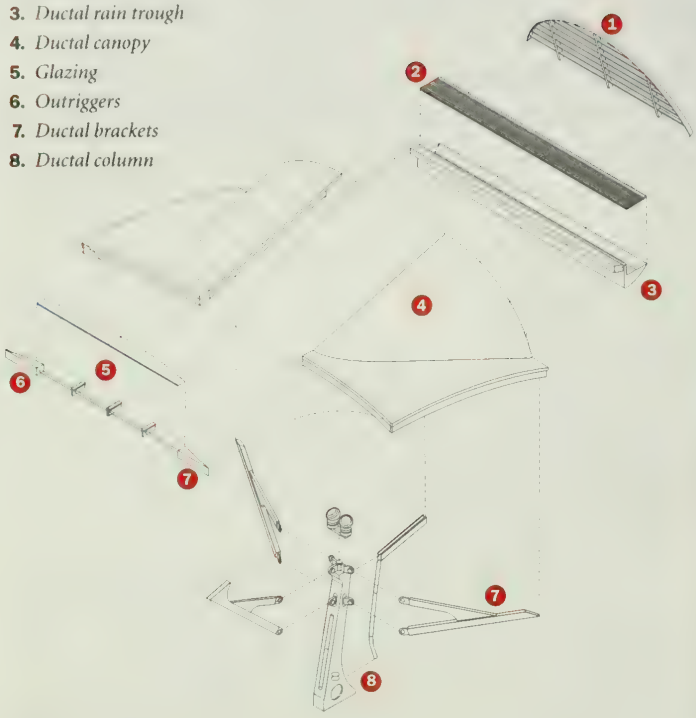
And yet, innovative technology is emerging that promises to make surface transport on roadways and railways more energy-efficient, reliable, and comfortable—from smoother rides on faster trains to sleeker buses with smart systems to keep them running on time, attractive alternatives to automotive transportation. The architecture of shelters and stations, which supports rail and road transit, is just starting to feed off

Frequent ARCHITECTURAL RECORD contributor Barbara Knecht is an architect and writer based in New York and Boston.



Belgian architects Samyn and Partners used a combination of fiberglass and steel fabrics to create canopies for the elevated Erasme Metro station in Brussels, which opened in September 2003.

1. *Louvers and glazing*
2. *Grate*
3. *Ductal rain trough*
4. *Ductal canopy*
5. *Glazing*
6. *Outriggers*
7. *Ductal brackets*
8. *Ductal column*



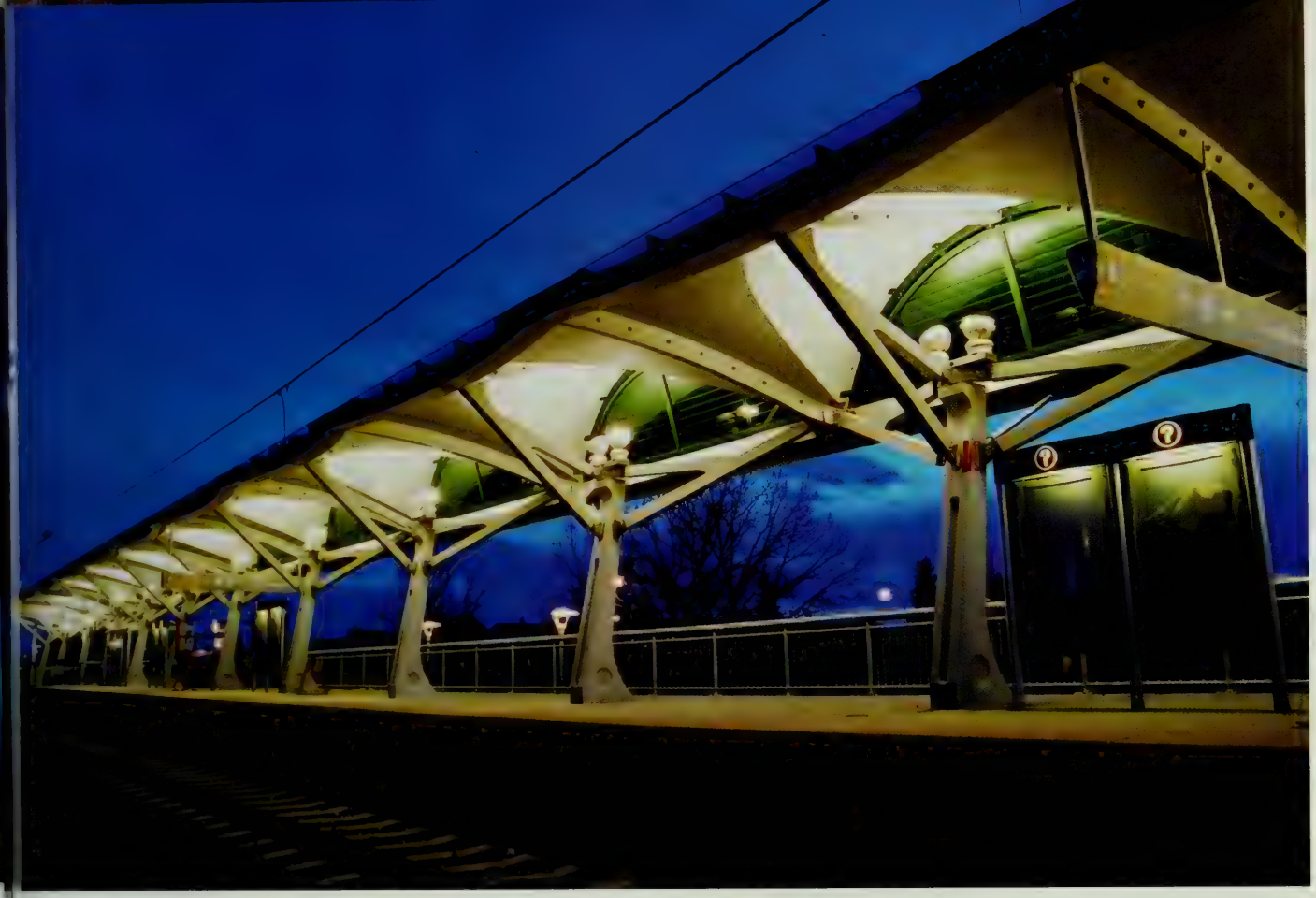
CANOPY MODULE





The Calgary-based CPV Group designed a bold station for an expanded light-rail system in the Shawnessy suburb of Calgary. A series of concrete-shell canopies provide platform coverage. Each canopy section is naturally lit through the louvered clerestories and enhanced with indirect lighting. The modular forms respond to the modest scale and rhythm of the nearby residential neighborhoods.





The CPV Group chose a palette of highly durable and maintenance-free materials, including stainless and galvanized metals.

the high-tech momentum that seems to be driving the current surge in advanced applications.

Riding (above) the rails

Light- and heavy-rail transit remains tremendously effective for frequent service in heavily traveled corridors. Intercity high-speed links have been contemplated in states as far-flung as California, Nevada, Florida, and Ohio, and are heavily used in Europe, China, and Japan. Denver and Dallas, Sacramento and St. Louis, among others, have opened successful light-rail surface systems within the past 10 years. Houston opened one at the beginning of this year. San Juan, Puerto Rico, will open a heavy-rail elevated and underground system this year, and upgrading and expansion continue on existing systems in New York, Chicago, and Boston.

However, current innovations in rail technology are focused on speed. For instance, magnetic levitation, or Maglev, is a system in which trains conquer friction's drag with electromagnetic propulsion. The frequency, intensity, and direction of the electric current controls the train's movement. One type of Maglev system, developed in Germany, is already in use in Shanghai, China, and another version is in development in Japan. With a top speed of 300 miles per hour, these trains are terrific for travel between neighboring cities, especially as an alternative to short-distance air travel.

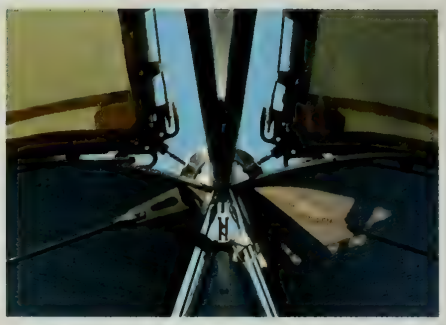
The three components of the system include magnetic coils, which line a guideway (comparable to a traditional track); guiding magnets on the undercarriage of the train; and an electric power source. The magnetic coils along the guideway repel the train magnets and levitate the train .39 to 3.93 inches above the guideway. Electric power supplied to the coils alternates constantly, changing the polarity of the magnets, which pulls the front of the train and pushes it from the back along the guideway.

The route between Pudong Airport and Shanghai opened for commercial service in December 2003 and is the fastest railway system in commercial operation in the world. Designed by Berlin-based Transrapid International (www.transrapid.de), the train levitates ½ inch above its guideway, and at speeds typically reaching 267 mph, it makes the 19-mile trip in 8 minutes. Unlike a conventional steel-wheeled train, a Maglev train doesn't use fossil fuels. A Japanese system in development is designed to use super-cooled, super-conducting electromagnets, which will save more energy than even the German system.

New and expanding rail systems are offering architects an opportunity to experiment with new materials in the design of stations and shelters. In Calgary, Canada, CPV Group architects designed a station with thin-shell concrete canopies. Enzo Vicenzino, CPV principal, notes, "The community wanted a design that would announce the entrance to its neighborhood and be distinguishable from the more traditional LRT stations. I was certain that the canopies needed to be a thin-shell concrete, and the local supplier recommended a newly developed abrasion-resistant, high-performance concrete material called Ductal (www.ductal.com), which has tensile as well as compressive strength."

In Brussels, Samyn and Partners used a combination of fiberglass and steel fabrics for the equally dramatic elevated Erasme Metro station that opened in September 2003. "This is the new terminus station of a major light-rail system," explained design partner Philippe Samyn. "The client was eager to see this station serve as a city gate as well as



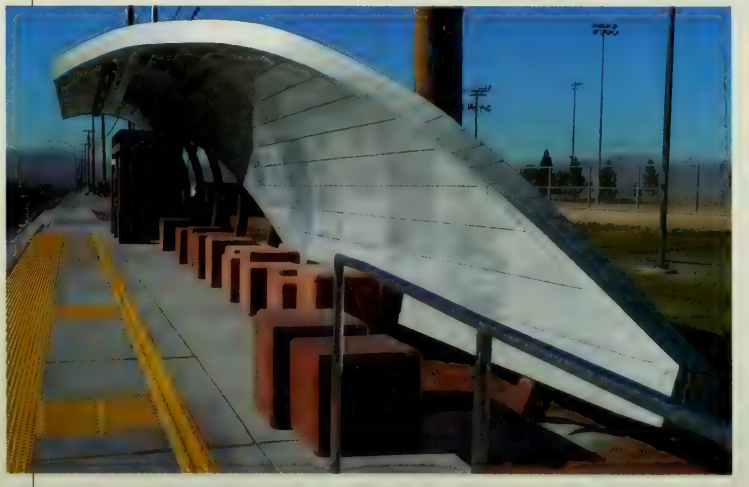




The Erasme Metro station in Brussels, by Samyn and Partners, is a combination of fiberglass and steel fabrics. The fiberglass fabric is formed into posttensioned "saddles" attached to arched steel frames. The architects chose a stainless-steel mesh, heretofore used only for sand separation in quarries. It is durable and provides natural ventilation.

linking a major hospital to the city center. It also says, 'Look at us! Use public transport!' "

The pedestrian approach, entrance hall, and the central platform are covered by a series of posttensioned fabric "saddles" attached to arched steel frames. The fabric was required to resist wind loads and shield passengers from the rain. The fiberglass fabric, with a life expectancy of 30 to 40 years, provides a temperate light during the day and glows at night. The stainless-steel mesh of the side walls is a product employed for sand separation in quarries. Used for the first time in an architectural application, it is extremely durable, breaks the wind, sheds rain, and provides natural ventilation. According to Samyn, the Ministry of the Brussels Capital Region, Administration of Equipment and Transport, while understandably conservative, was very supportive of the use of fabric.



Assemblage Studio Architects of Las Vegas designed a whimsical shelter for a state-of-the-art bus system to be introduced this summer.

Where the rubber hits the road

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Bus Rapid Transit (BRT), sometimes called a surface subway, is not new. From Curitiba, Brazil, to Ottawa, Canada, communities have invested in highly successful roadway transit systems that use buses, separated in dedicated lanes, which have limited stops at identifiable stations, where fare is collected prior to boarding and service is frequent. Often cast as a substitute for light rail, it has characteristics of both bus and rail. Although it has dedicated lanes, they may either be physically separate or instead may include right-turning or emergency or other buses for some sections of the route. When the BRT bus shares the public road, it often communicates directly with the traffic signal system to get priority at intersections. Deviations from the route or changes are easier to implement with BRT than with fixed rails. New technology will further distinguish it from its conventional rail and bus siblings.

This summer, Las Vegas will be the inaugural U.S. site for the Civis bus rapid-transit vehicle manufactured by Irisbus of France. Called MAX by its owner and operator, the Regional Transportation Commission of Southern Nevada, it will have all the features of other BRT systems except the driver is aided by an optical guidance system, which uses cameras to follow painted lines in the road. For a vehicle in a dedicated lane, the guidance system keeps the bus on its course. There is a driver who can take over controls with the touch of the hand. Because MAX will share the road with other vehicles, the optical guidance system will be used for precise docking at each station. MAX will stop each time at the same place in front of the whimsical new shelters designed by Assemblage Studio Architects of Las Vegas.

Looking more like a monorail or a bullet train than a workaday bus, the Civis bus is typical of new-style buses that aim for sleeker looks



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and improved accessibility. Aerodynamic design, hybrid diesel-electric propulsion for fuel economy, and four doors and a low floor for easier loading are typical of advances in bus design. Low-floor buses appeared in Europe at least 10 years ago and came to this country about five years ago when rental car companies began experimenting with them for transporting customers from the terminal to their lots. Dropping the floor of the bus lower to the ground makes it much easier for most people to board, with or without suitcases and packages. On long buses, there is a high central section to clear the axle, which reduces the overall advantages. The Civis bus improves this by removing the central axle and powering each wheel with its own motor, making the entire bus universally accessible.

MAX will have the added advantage of integration with the local bus system. Passengers pay one fare once to ride on any part of the system. If the first transportation choice is always one ride door-to-door, then every time a person changes seats, it must be seamless. Local fare integration and single payment isn't common yet; regional and larger-area integrated fare systems are indeed a rarity. Within 10 years, the experts say, one will be able to change from the Maglev train to the BRT to the local system with a regional-transit-fare card, leaving cash and fumbling at machines or fare kiosks behind. Toll-road technology is at

"DIMENSIONS TO IMPROVE 'CONNECTIVITY' INCLUDE FACILITY DESIGN, SERVICE PLANNING, AND SERVICE CONTROL."

hand for the transit system. A prepaid device (presumably some kind of card) will automatically calculate and deduct the cost of trip segments. It will be automatically replenished and a record of all transactions will be available on demand.

Seamless transfers mean never having to stop to pay a new fare, and having the bus turn up within minutes of your arrival. If we can't make the trains run on time, how will we ever be able to make the buses run on time and in the places where they are needed? Answers to that question may come, in part, from the research of Professor Nigel Wilson, of Massachusetts Institute of Technology's Center for Transportation and Logistics, and his students. Wilson observes, "Dimensions to improve 'connectivity' include facility design, service planning, and service control." Transit operators are already collecting vast amounts of information about their riders from fare-card readers and automatic passenger counting. Buses are being outfitted with satellite Global Positioning Systems (GPS) that will help control centers track bus locations.





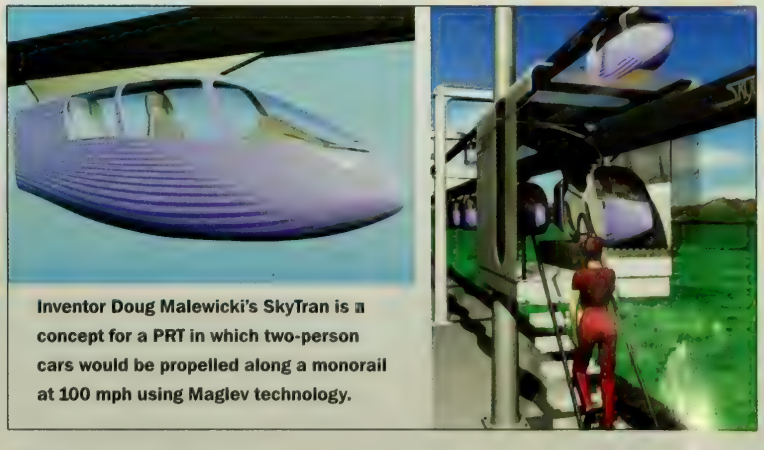
Taxi 2000's SkyWeb Express is a Personal Rapid Transit (PRT) system. Passengers select a destination, purchase a ticket, and enter a vehicle. Guideways take the cars directly to their destination without stopping.

Knowing where the vehicles are at any moment means being able to inform passengers of when to expect the next bus, just as rail systems commonly do already. It also means that adjustments can be made quickly to respond to emergencies or other short-term events. Collecting information on who goes where and when will improve route and capacity planning for better service design on average days. Small buses can run on low-volume routes during the rush hour and on higher-volume routes to increase frequency in the nonrush periods. Schedules between bus feeders and rail transit can be coordinated for expected connections.

Way down the road

There is, of course, also a system to appeal to those who want their own vehicle to go where they want, when they want. Skyweb Express (www.skywebexpress.com), SkyTran (www.skytran.net), and CyberTran (www.cybertran.com) are just three variations on Personal Rapid Transit (PRT) that comes on demand and takes you to your specific destination—as long as it is on the guideway system. In its most common form, small cars that may hold from two to 20 people run on lightweight elevated tracks or guideways. Stations, which can even be located within buildings, are off the guideway, so other traffic moves freely past loading and unloading vehicles. Rather than traveling on fixed routes, passengers program the vehicle, just like an elevator, for pick up and drop off anywhere along the network. Proponents cite convenience, safety, energy-efficiency, and low capital costs as advantages. These are still the domain of *The Jetsons*, but someday, in a well-connected transportation network, they may become a reality, too.

In the robust transportation system of the future, we will have many surface modes, each doing what it does best: longer distances at very high speeds; medium distances by thoroughly integrated networks; and short distances by bicycle, car hire, self drive, or PRT that reach every door. ■



Inventor Doug Malewicki's SkyTran is a concept for a PRT in which two-person cars would be propelled along a monorail at 100 mph using Maglev technology.

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Zoom In

Bahá'í Mother Temple, Santiago, Chile

By Deborah Snoonian, P.E.

When Toronto firm Hariri Pontarini Architects won a competition for a 21,000-square-foot place of worship in South America, it turned to Gehry Technologies to help it achieve a form that was both highly organic and buildable.

Leaders of the Bahá'í Faith, which has five million members worldwide, wanted a nine-sided dome structure with nine entrances to signify openness to all peoples, says principal Siamak Hariri, himself a member of the faith. Hariri and his team developed what he calls "a glowing temple of light" clad with nine graceful, draped "leaves" of translucent alabaster. "We sought symmetry in the form," notes Hariri, not only to signify the faith's ideals of equality and harmony, but also for pragmatic reasons: Symmetrical structures are generally cheaper to build and easier to reinforce structurally (the temple is located in a seismic zone).

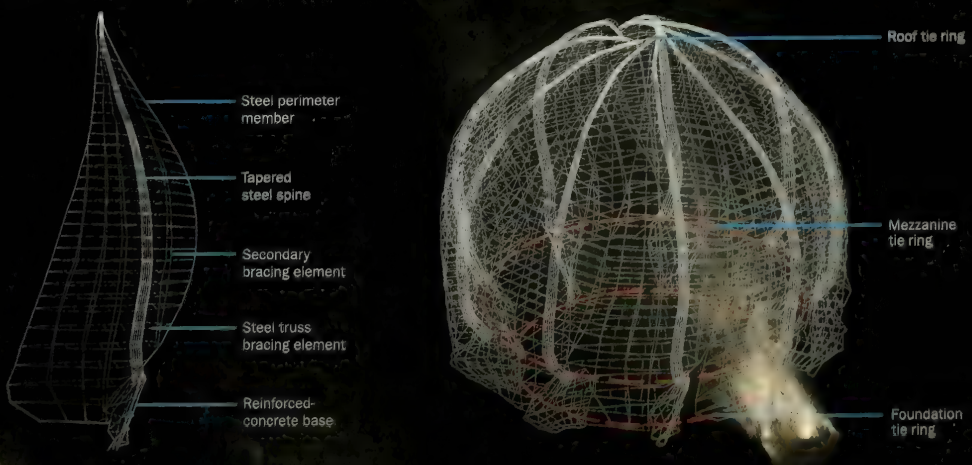
Achieving symmetry meant manipulating numerous physical and digital models. With engineers Carruthers and Wallace, the designers used Maya software to model the "leaves," then spent a week with Gehry Technologies in California refining them and analyzing the structure in CATIA. "It was exciting. We came away with a richer understanding of using technology to achieve design goals," says Hariri of working with the Gehry team. The temple will open in 2007. ■





Designers "panelized" the surface of each "leaf" to minimize the number of stone slabs that need to be cut to conform to its curves (above). Circular in plan, the temple will seat 600 people (below).

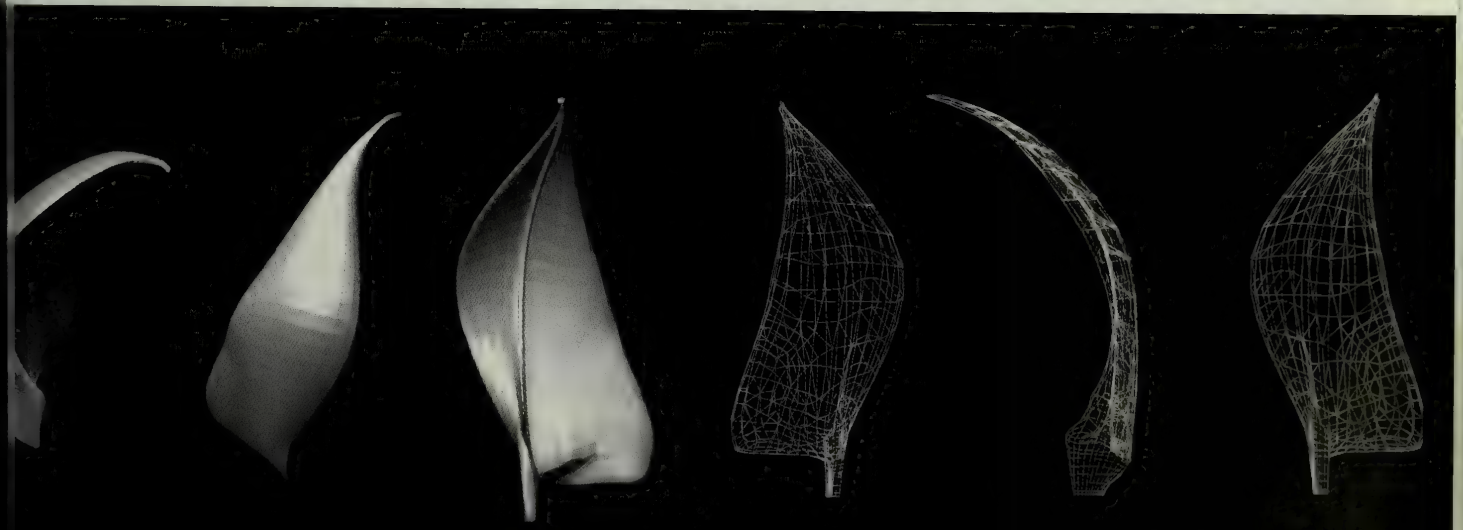
A structural system that mimics Mother Nature



Nine identical curved panels, each anchored to a reinforced-concrete base, enclose the Bahá'í Temple. Structurally, they are supported by central vertical spines—like real leaves—from which branch the secondary steel supports that bear the load of the stone exterior and wood interior. Tie rings at the roof, mezzanine, and foundation levels provide lateral stability.



A highly nonorthogonal building calls for complex structural analyses made possible by serious number-crunching software. Using CATIA, the design team analyzed the temple's form and loads to determine where to add reinforcements and stiffening members for the steel endoskeleton.



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BYTES

The AIA and the Department of Energy's National Renewable Energy Laboratory will sponsor the 2005 Solar Decathlon next fall, with 19 university teams designing and building energy-efficient homes on the National Mall in Washington, D.C.

Tholos Systems of Austria plans to install king-size videoconferencing centers in public spaces in London and Vienna this year. The booths are circular, with 360-degree high-definition televisions 10 feet tall and 23 feet in diameter, and will be host to tourist information and other content.

At the opening of the Stata Center at MIT in May, Gehry Technologies demonstrated its new software, DIGITAL PROJECT, a design package based on Dassault's CATIA V5.

A 960-square-foot residential experiment in Cambridge, Massachusetts, called PlaceLab is slated to open soon. It will use sensors, embedded microphones, and tiny cameras to collect data on everything from residents' exercise patterns to the number of times they open the refrigerator. The project is a joint venture between MIT and Tiax, a local collaborative research and development company.

A new Web site launched by the U.S. Green Building Council and the National Environmental Education & Training Foundation, GreenerBuildings.com, provides case studies, tools, and other resources to help companies understand the business case for sustainability.

Researchers at UCLA are perfecting an electrochromic polymer that glows green when an electric charge is applied to it, adding to the blue and red polymers already available. In time, the polymers will be used to make flexible and inexpensive displays, they say.

California tests conventional and "green" products for emissions



By measuring emissions of paint, furniture, and finishes, California officials aim to develop a list of acceptable products for use in public buildings, such as libraries.

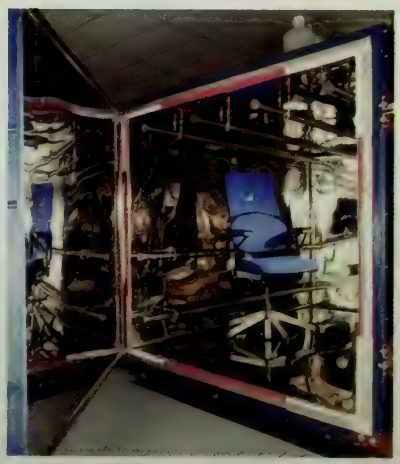
Weighing the health and environmental effects of building products typically means sifting through incomplete, mismatched, or out-of-date manufacturers' literature, government documents, and lab data. Officials in California, perennially the green-building trendsetter among states, recently stepped into the breach by publishing the results of emissions tests on paint, ceiling panels, carpeting, wall components, flooring, and other indoor products that are manufactured both conventionally and with recycled content. Their work will make it easier for designers to compare available products and anticipate their impact on indoor air quality (IAQ).

The tests were coordinated by two different groups—a state agency, the California Integrated Waste Management Board (CIWMB), and the nonprofit Collaborative for High Performance Schools (CHPS). They were based on the state's special environmental requirements specifications (Section 01350) for sustainable building projects. The tests screened for more than 70 substances, including ammonia, benzene, chlorine, and toluene. To establish the limits in the specifcations, researchers drew up a list of chemical compounds typically found in indoor air, calculated safe exposure levels for a 20-year period, and halved those figures to establish maximum allowable emissions.

So far, the data suggest that conventionally manufactured products and those that contain recycled content have roughly similar emissions profiles. Many of the products failed to meet the state's public health emissions standards for this criterion, most on the basis of a single chemical, according to officials. Big chemical offenders included naphthalene, formaldehyde, and acetaldehyde, which are tied to respiratory and eye problems. The 01350 tests helped counter the perception that products containing significant recycled content are worse for IAQ than standard products, according to Tom Estes, manager of the waste management board's sustainable building program. "Emissions are really dependent on what you put into the material, regardless of whether it's virgin or recycled," says Anthony Bernheim, FAIA, managing principal and head of green design at SMWM in San Francisco and an adviser for the state's research efforts.

The tests funded by the waste management board were conducted by the California Department of Health Services (DHS), which evaluated 77 samples of interior building products. After a 10-day airing-out period, products were prepared as they would be for assembly or installation (e.g., adhesives applied to carpets) and tested for 96 hours in a sealed chamber. The measured concentrations are used to model estimated concentrations in typical classrooms or offices, based on assumed spatial dimensions and ventilation rates.

In a concession to manufacturers, vendor and product names have been omitted from the most detailed results, but the testing is



For emissions testing, products like office chairs (above) are sealed in a chamber where offgasses are tested.

Tech Briefs



California's push to improve indoor air quality has strong support by the school districts.

yielding useful data. "It's the first time as architect that I have a tool I can take to the manufacturer and say, 'If you don't exceed this level, you're okay,' where the level is based on health," says Bernheim. ASTM officials are considering adopting the test protocols as standards.

In some cases, the California studies have led manufacturers to reformulate their products or pay closer attention to contributions from raw-material providers and supply-chain partners, something that the green-building community has encouraged for many years.

The waste management board report is available at www.ciwmb.ca.gov/greenbuilding/specs/section/metstudy.htm, and a list of products that passed the tests for the state's Capital Area East End Complex office project is available at www.ciwmb.ca.gov/greenbuilding/specs/eastend/. The DHS is now monitoring the long-term emissions of materials in the East End facility, according to officials.

The Collaborative for High Performance Schools (CHPS) initiative, which is ongoing, relies on independent lab tests arranged by manufacturers. IAQ is an optional but commonly addressed category of CHPS's green school guidelines. The testing program stems from efforts by the Los Angeles Unified School District to list products that meet Section 01350 standards. Qualifying products are added to a Web site, www.chps.net/manual/lem_overvw.htm, as manufacturers submit their test results.

Officials stressed that the specifications note only emissions levels for products, not other environmental measures, such as embodied energy and pollution generated during manufacturing and distribution.

Ted Smalley Bowen

Building industry professionals gather to pledge commitment to interoperability

In late April, more than 30 industry associations, professional organizations, government agencies, and software companies assembled at the AIA's headquarters in Washington, D.C., to explore opportunities to promote the adoption of open standards for digital data exchange in the design and construction community. By the end of the meeting, each attendee had signed a pledge to work across organizational boundaries toward the so-far-elusive goal of interoperability—in which hardware and software made by different vendors work together seamlessly, so that users in disparate groups can exchange digital design information effortlessly throughout the life of building and design projects. Achieving this goal, industry leaders say, will allow buildings to be erected faster and cheaper, as well as operated more effectively and efficiently. *(continued on page 302)*





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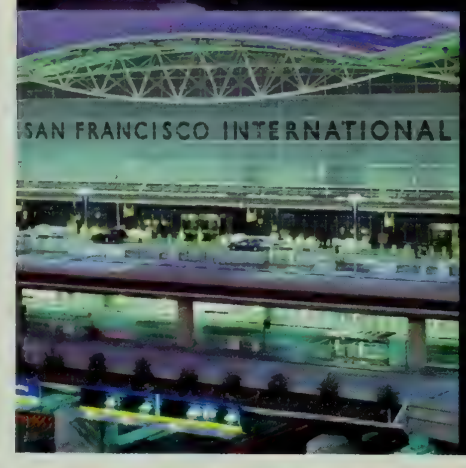
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Tech Briefs

The gathering differed from past efforts in that organizers emphasized what the participating groups could do as a whole to promote open standards and interoperability, instead of focusing on individual efforts by a single group or company in particular. "These groups are competing within a small community: No one gets sufficient funding or attention to be effective. And up to now, efforts to develop standards have been fragmented and uncoordinated, and the value of interoperability has not been effectively 'sold' to the professional user community," says of one of the conference's organizers, Jonathan Cohen, FAIA, the former head of the AIA's Technology in Architectural Practice Committee (TAP).

Perhaps the most significant outcome of the meeting was an agreement to establish a Web site, www.building-connections.org, to serve as a "one-stop" information source about interoperability for building professionals, including case studies and progress updates on achieving open standards. The site's content will be provided voluntarily by the organizations that attended the congress; it will be launched later this year.

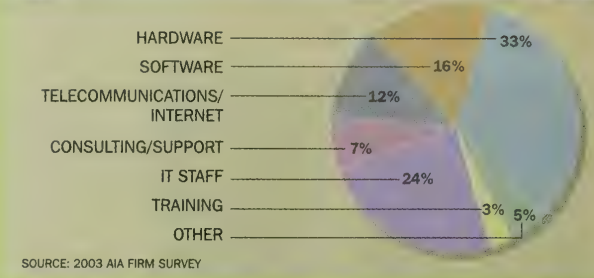
To avoid duplication of effort, two disparate groups that have been working to develop open standards agreed to coordinate their efforts—the National Institute of Building Science (NIBS) and the Open Standards Consortium for Real Estate (OSCRE), a group begun in 2000 by private-sector managers for Cisco, Intel, and other technology companies.

The group will meet again in early June to set forth a more detailed agenda for collaboration. *Deborah Snoonian, P.E.*

What the Numbers Say

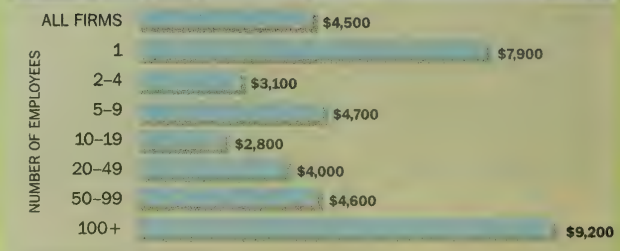
What does your firm spend on IT? Not surprisingly, the 2003 AIA Firm Survey revealed that the costliest IT items are hardware and personnel (top) and that single practitioners and large firms spend more per employee on technology than mid-size firms (bottom).

IT-RELATED EXPENDITURES IN 2002, AVERAGES ACROSS ALL FIRMS



SOURCE: 2003 AIA FIRM SURVEY

SPENDING PER EMPLOYEE, AVERAGE ACROSS ALL ITEMS



SOURCE: 2003 AIA FIRM SURVEY



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Energy tool, CAD updates, a mini-PC

By Deborah Snoonian, P.E.

Green Building Studio
GeoPraxis
www.geopraxis.com
Windows only

This free Web-based service provides an analysis of a building's energy characteristics during the conceptual design phase. Users must register for an account at the company's Web site, then download a free software plug-in that works with their 3D CAD system (currently Graphisoft's ArchiCAD and Autodesk's current versions of ADT, Revit, and Building Systems). After completing a conceptual design, the user enters the building's type and location and clicks a "Submit" button that sends design data to the Green Building Studio Web site, where the structure is analyzed for energy performance. Results can be viewed on the Web site or downloaded as a gbXML file that users may share with consultants or team members for more detailed energy analyses using programs such as EnergyPlus or DOE 2.2.

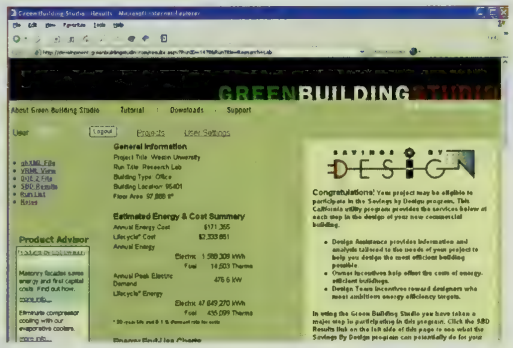
Architectural Desktop 2005
Autodesk
www.autodesk.com
Windows only

Autodesk's latest version of ADT, its original 3D CAD program, includes a new "details" feature with a library of built-in, editable components, as well as automated routines that help users draw details more quickly. Objects created within ADT are now compatible with the company's Building Systems software for collaboration and file-sharing purposes, and the interface now supports third-party programmers who wish to create niche applications for engineering analyses. The software also supports the Industry Foundation Classes (IFCs) developed by the International Alliance for Interoperability by way of translation software.

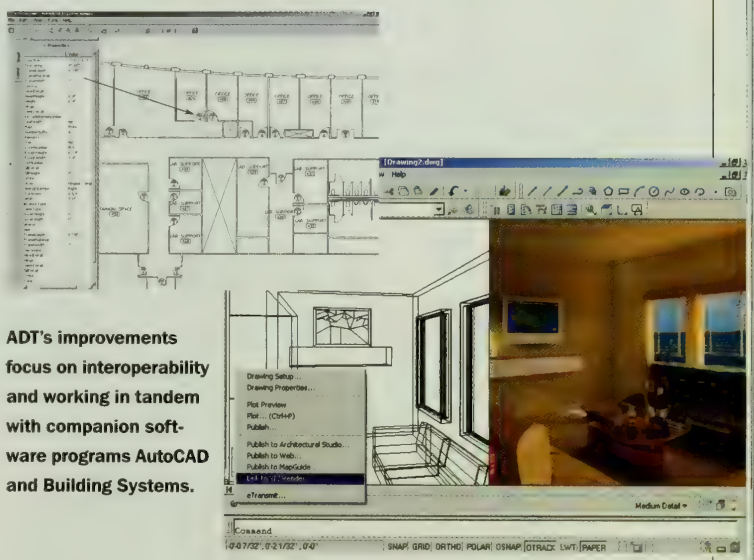
ultra Personal Computer
OQO
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Windows only

This Windows XP-compatible computer boasts the number-crunching power of a conventional laptop at a fraction of the size and weight (4.9 inches by 3.5 inches by 0.9 inch, weighing 14 ounces). The ultra Personal Computer (uPC) comes equipped with a 1-gigahertz processor, a 20-gigabyte hard drive, a color display screen, and Firewire and Bluetooth wireless capabilities. A USB port lets you add a mouse or another peripheral device; a miniature keyboard, mouse buttons, and thumbwheel allow data input and navigation. When connected to its docking cable, the uPC can be enhanced with audio and Ethernet functions or a second USB or FireWire port. Though it's not souped-up enough to manipulate CAD files, the uPC represents a viable option for those who want to tote more power than a handheld organizer offers, but with a lot less bulk than a laptop. The company says the uPC will be widely available by summer 2004.

For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at **www.architecturalrecord.com**.



GeoPraxis offers free energy analyses for conceptual designs.



ADT's improvements focus on interoperability and working in tandem with companion software programs AutoCAD and Building Systems.



Only a bit larger than a handheld organizer, OQO's ultra PC packs more computing power.

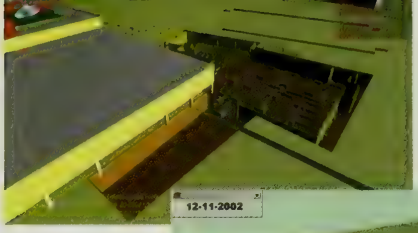
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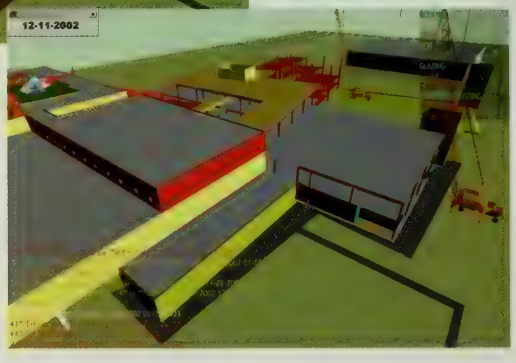
Project 4D and ConstructSim
Common Point
www.commonpointinc.com
Windows only

Common Point's founders first began working with simulation construction sites at Stanford's Center for Integrated Facility Engineering (CIFE). Project 4D, its flagship program, adds a fourth dimension—time—to a typical 3D building model so that users can visualize construction activity for a building or group of buildings and manage the schedule accordingly, to ensure that conflicts and delays are minimized. The software uses information imported from a variety of existing CAD and scheduling programs. ConstructSim is a "visual collaborative environment" for a project team, integrating data from Project 4D as well as engineering, procurement, and materials-management software for a more comprehensive management effort.

Speech Privacy Predictor
Armstrong World Industries
www.armstrong.com/speechprivacy
Windows or Mac

A company known more for ceiling panels than software, Armstrong has created a design aide for predicting the acoustic performance of spaces like offices and healthcare facilities where speech privacy is a high priority for occupants. Users enter the dimensions and materials of a space as well as the distance between talkers and listeners. The software returns a Privacy Index (based on an ASTM standard) that tells the user whether a design is achieving the project's speech-privacy goals, as well as options for improving performance.





Common Point's offerings allow teams to see how construction will proceed, so they can identify potential conflicts and trouble zones.



Armstrong's acoustic tool analyzes room geometries and materials in order to forecast speech privacy.

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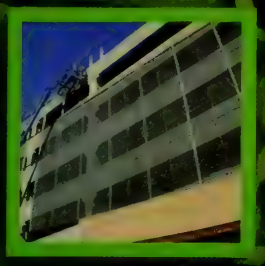
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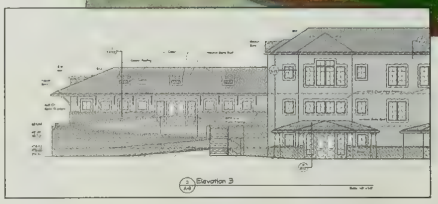
VectorWorks ARCHITECT
Nemetschek NA
www.nemetschek.net
Windows and Mac

Improvements in drawing efficiency are the hallmark of Nemetschek's update of its CAD package for architects. A database for notes lets multiple designers share a common set of annotations and text for drawings that are used repeatedly, and new page-layout features let designers compose drawing sheets that combine multiple views of the same design at different scales and sizes, including text and annotations. New building objects, such as a ceiling-grid tool and a stair tool, make enhancements to building details easier to draw and manage. Built-in rendering modes now include options for softening hard-edged drawings so they appear hand-sketched.

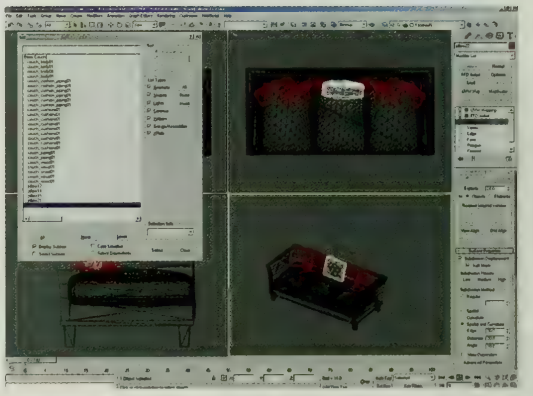
VIZ 2005
Autodesk
www.autodesk.com
Windows only

Autodesk says that VIZ is to digital 3D modeling what clay is to physical modeling—a medium for highly mutable, early-stage exploration of design options. One major new feature of the latest VIZ release, the incorporation of mental ray's rendering technology for global illumination, lets ambitious designers create ultra-high-quality photorealistic renderings by capturing subtle lighting effects and shadows within a space. Other new features include an architectural materials library; better editing features for splines, polygons, and patch objects; and improved cross-platform compatibility with other Autodesk products. ■

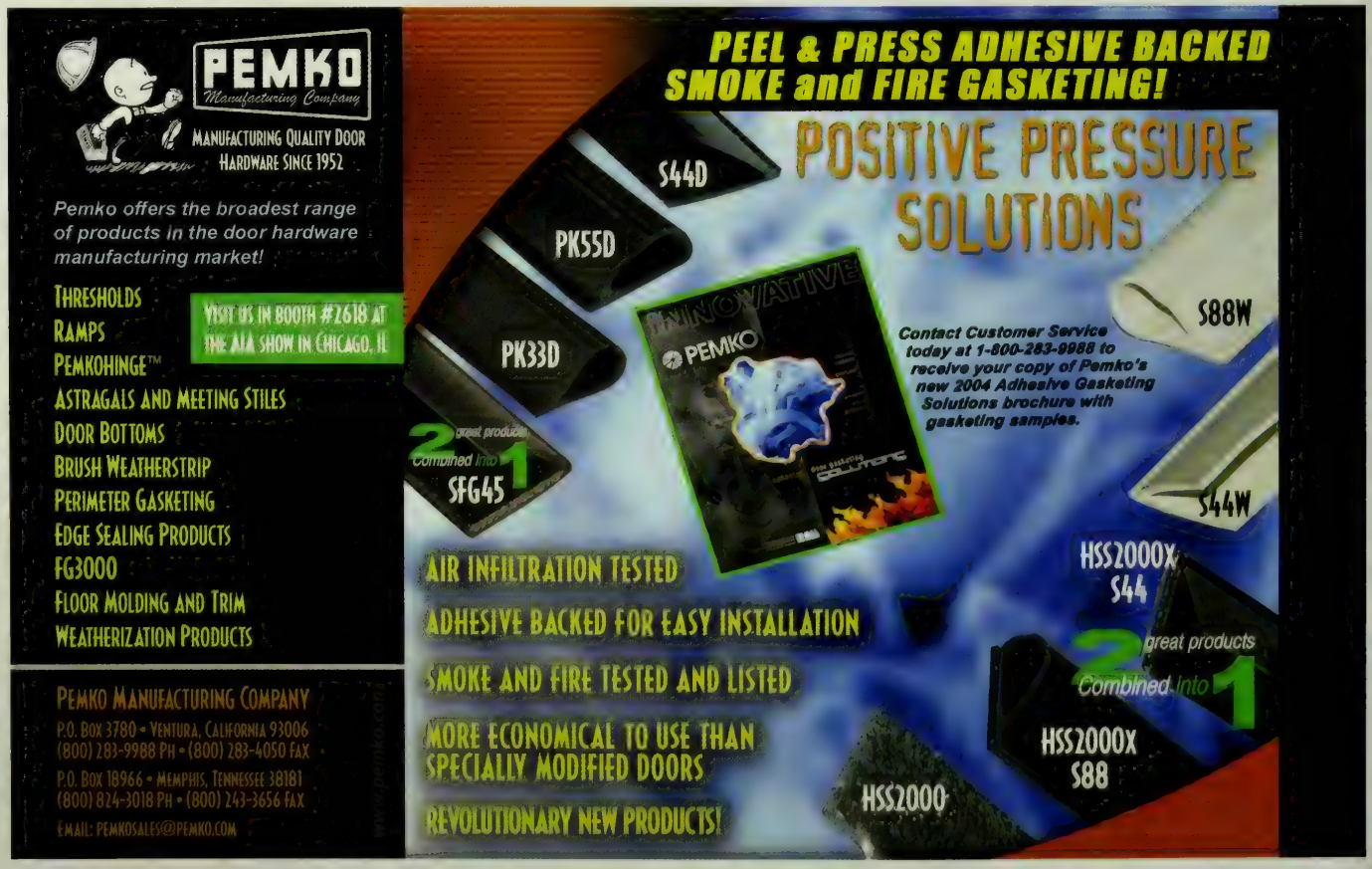




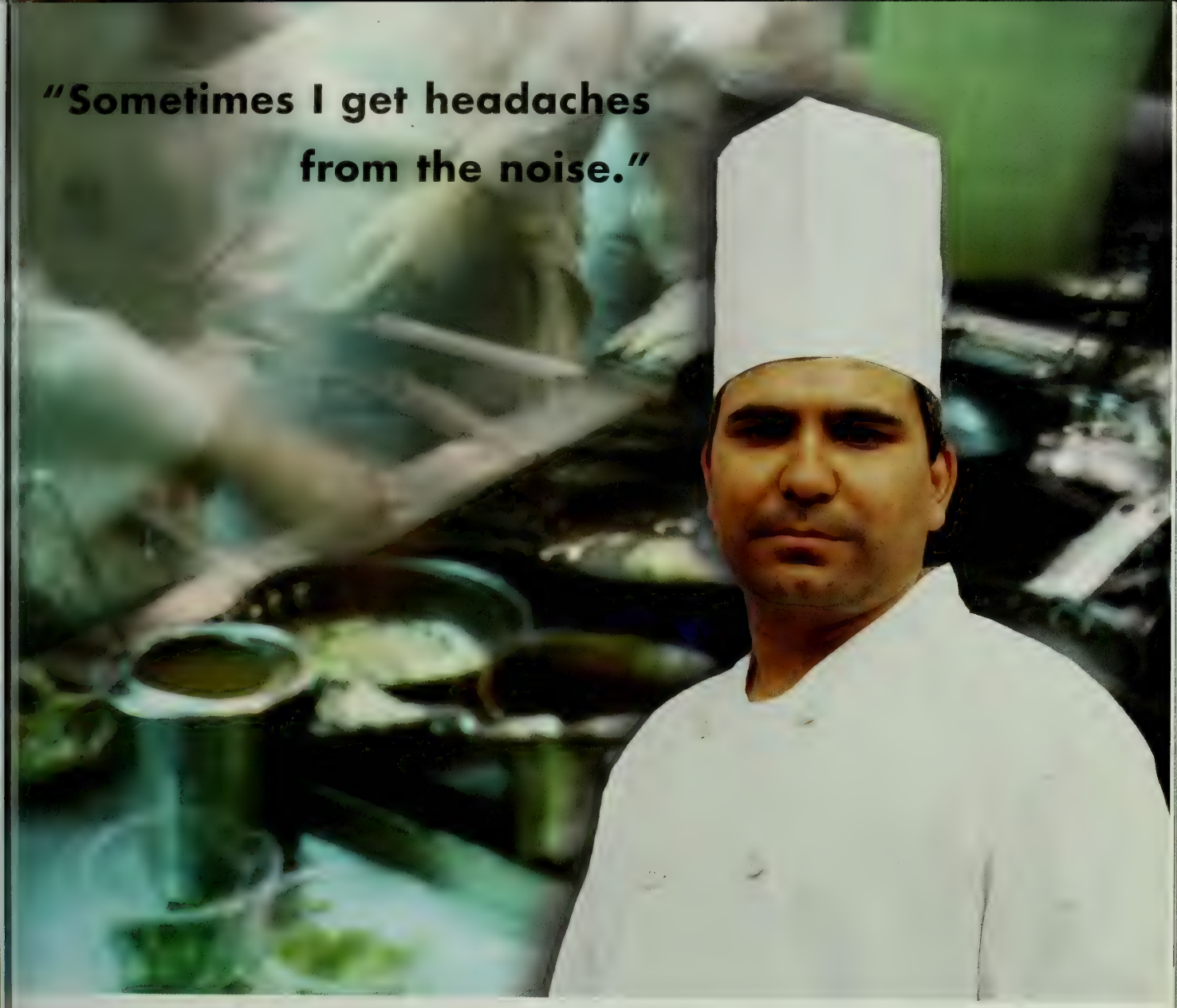
Changes to the latest release of VectorWorks ARCHITECT include libraries of notes and improved page-layout features.



Global illumination lets VIZ users make realistic renderings.



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JELD-WEN PRESENTS

Window Installation:

Last year, there were 300,000 mold damage claims in the U.S.; insurance company payouts skyrocketed to $1.5 billion...

Can your firm afford to ignore the problem?

ıe Sacramento, Calif., law firm of Sieving & Momjian specializes in construction v, most often in defense of manufacturers involved in construction defect claims.

"Ninety-five percent of the cases we are involved with involve some kind of water-intrusion claim," says principal Richard Sieving.

Why do we bring the issue up here?

Very simple.

If you haven't yet been called to give depositions about your role in designing fenestration installations, consider yourself lucky. Chances are, you will be.

"The situation in California is out of control," says Sieving. "The success rate of lawyers here, and the magnitude of the awards in construction defect cases has attracted the attention of attorneys in other states. The problem is spreading."

If you think that your firm is diligent, and, therefore, immune, think again.

"The prevailing shotgun approach (by attorneys) implicates virtually every party involved in a failed building—regardless of culpability," says Thomas Butt, FAIA, a Richmond, Calif., city councilman, and principal-in-charge of Richmond-based Interactive Resources, a traditional design firm with an emphasis on forensic and diagnostic architecture.

"Mold" has become to the legal profession what asbestos was a decade or two ago. Every personal injury attorney with a license on the wall is looking to file mold-damage claims because, sources say, mold damage is a quicker and surer route to a courtroom payday than traditional, more often than not long-lasting, construction defect claims.

"Insurance companies also tend to cover personal injury claims involving mold more readily than they do defective construction claims," says Sieving.

The payoffs are sometimes enormous: awards to policyholders of $1 million or more are becoming almost routine. In New York City, more than 300 tenants of an apartment complex with mold problems filed a class action lawsuit in excess of $10 billion. In many cases, settlement figures are in excess of $500,000.

"A recent case in Santa Clara," Sieving says, "involving a construction defect claim on a high-end single-family home, resulted in a final award of $3.2 million, $600,000 of it to repair construction defects, the remainder for personal injury

ONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Window Installation.** To earn one AIA/CES Learning Unit, including ıe hour of health safety welfare credit, answer the estions on page 315, then follow the reporting instruc-ns on page 386 or go to the Continuing Education ction on *archrecord.construction.com* and follow e reporting instructions.

ARNING OBJECTIVES

ter reading this article, you should be able to:

- *Have a broader awareness of the changes underway in the U.S. window industry.*
- *Understand the methodology of successful window installation.*
- *Appreciate the role architects must play to insure "leak-free" structures.*

New Construction Vinyl Window and Nailing Fin



1. Check rough opening



2. Apply flashing to sill



3. Nail continuous support to sill



4. Apply drain screen



5. Inspect window



6. Place window into opening



7. Install window



8. Install flashing



9. Roller flashing



10. Tape down house wrap



11. Seal window

New Construction Vinyl Window and Nailing Fin

Building wrap applied to rough opening and trimmed 3" away from the rough opening edge at the head and sides. At the header corners, building wrap should be slit back 9" at a 45° angle and taped up and out of the way.

STEP 1 Check for square; check sill for level
STEP 2 Apply self-adhesive flashing to the sill
STEP 3 Nail the continuous support (shim) into place on the sill
STEP 4 Apply drain screen
STEP 5 Remove window packaging; inspect window; secure window locks
STEP 6 Place window into opening
STEP 7 Install window: fasten one bottom corner through nailing fin and check window for level; fasten through nailing fin around window
STEP 8 Apply flashing
STEP 9 Roller flashing
STEP 10 Drop down building wrap that was taped up at the header; tape down
STEP 11 Seal corners with caulk

(the plaintiffs alleged, among other things, that a learning disability of one of their three children was related to mold infestation). I know a California attorney who, all he does is try mold cases alleging personal injury. He doesn't win a lot of cases, but every once in a while he rings the bell, and when he does, it is a loud ring."

Orange County-based Danelian Associates, a 60-person design firm, watched its insurance premiums rise every time the firm was named in a lawsuit. "Until five years ago, we were named in many suits," says principal-in-charge, Art Danielian, FAIA. "None of them had to do with design errors, and none of the cases ever went to court. In most cases, attorneys alleging problems never even have to discuss the merits of their case. A judge just looks at whether there are insurance (pools) from which to draw."

The California uproar over construction defect claims—and a massive lobbying effort by the construction industry—led, in 2002, to the enactment of SB 800, the state's "right-to-repair" law, which for the first time, set clear performance standards for building components. At last count, 17 other states had followed California's lead and had enacted, or were prepared to enact, right-to-repair laws.



Tools required for window installation.

Following passage of SB 800, *The San Diego Tribune* asked editorially "Is it Safe to Build Condos in California Again?" In some California counties, San Diego County among them, every condo project built in the past 20 years had been litigated for construction defects. Construction defect lawsuits brought California's condominium and townhome construction to a virtual halt in the early 1990s. SB 800 was a measure lawmakers hoped would turn the tide.

The first ASTM minimum installation standards, three years in the making, also were introduced in 2002. The ASTM standards are technical. They are 196 pages long, and they are expected to cause considerable confusion at the jobsite.

The International Residential Code (IRC) was amended by the ICC last year in Nashville to read, in part: Windows shall be installed and flashed in accordance with the manufacturers written installation instructions. Each window shall be provided with written installation instructions provided by the manufacturer....

Over the past two years we have also seen code changes across the U.S. and in Canada. In Vancouver, B.C., developers are now required to hire "building envelope specialists" to review designs. Elsewhere, Right-to-Repair laws have put the performance of fenestration products and their installation into the civil code.

"The leading manufacturers have gone from a dearth of installation information to a plethora," Butt says. "Unfortunately, most of it is complex, hard to read, difficult to understand and overly optimistic that a construction worker will implement it—particularly if it is not translated into Spanish or some other language."

Couple regulatory confusion with technological change—there are now dozens of new, competing sill flashing and pan methodologies available on the market for the first time—and the water becomes even murkier.

"Installation methodology has come a long way in the past several years, and it is important that architects understand the changes that are underway and acknowledge their role in finding solutions," says Ward Deems, FAIA, the former principal of a San Diego design firm, now an architectural consultant to an Oregon-based window manufacturer.

"These changes," says Deems, "were driven, in part, by litigation. The industry has found that it needs a coherent installation program. Yet, the industry is one in which a majority of installers most likely have no high school education, and may or may not speak English. We have a major problem."

The most proactive of U.S. manufacturers by now have gone to considerable time and expense to prepare detailed installation instructions to accompany their products and have mounted campaigns that include box lunches with architects and job site meetings to get the new message across.

> "These cases cost a huge amount of money to defend," Sieving says, "and more and more we are seeing architects drawn into the debate. Attorneys allege that installation design was insufficient. Even if designers are not party to (original) lawsuits, the allegation of design deficiencies eventually becomes an issue in virtually every case."

The issue is of such topicality that the AIA will, for the first time, present three continuing education seminars on water intrusion and mold prevention at the institute's 2004 National Convention and Expo at Chicago's McCormick Place June 10–12.

Manufacturers' installation instructions are likely to be complex, overly detailed and, in many cases, redundant, because it may take a certain amount of redundancy to ensure that water intrusion is kept to a minimum.

"Beginning in 1995, we began to see significant increases in water intrusion claims—both non-litigation claims (warranty requests) and litigated claims," says Wally Corwin, corporate manager of product integrity for a leading window and door manufacturer.

Water intrusion issues have grown both in number and as a percentage of total claims faced by the manufacturer, Corwin says. Add to that the significant growth of "sick building" or mold claims and the increase is dramatic in all areas (number of claims, size of claim, complexity of managing cases and the length of time until resolution). Our investigations and inspections have shown that just a little over 73 percent of the water intrusion claims are, either fully,

or in part, installation-based. These figures are consistent with other reports within the U.S. and research studies from other countries, including Canada and New Zealand."

The problem is not isolated to any one manufacturer's product or to the continental United States. Many factors have fueled the increase in claims and the extent of damage, Corwin says.

"We can cite changes in construction materials, an increased susceptibility of construction materials to water damage, changes in construction technique, the "industrialization" of the building industry, larger homes, increased exposure, tighter homes, increased use of HVAC, increased use of sealants, more lawyers, poor customer service."

General Errors That Lead to Failure

Our investigations, Corwin says, point to a number of general errors that were the root cause of a majority of the installation failures we observed:

1. Improper use and application of sealants as moisture barriers.
2. Failure to tie the water plane of the window into the weather plane of the wall.
3. Improper lapping and installation of flashing and weather membranes.
4. Failure to properly shim and attach the fenestration product into the rough opening.
5. Failure to understand the long-term performance and compatibility of products used in the installation.
6. Failure to provide a secondary system to handle water when the primary system failed.
7. Failure to protect the space between the fenestration product and the rough opening from excessive air pressure.

In response, Corwin has developed what he calls "The 11 Theories of Installation." Many installation materials and techniques may be used to achieve a successful installation. However, all installations must abide by the following general principles:



1. Build redundancy into the system. Fenestration products without welded corners and integral nailing fins will allow some water to enter through exterior joints. Direct any water to the exterior.
2. Tie the water plane of the window to the weather plane of the wall (usually building wrap) in a waterproof and contiguous manner. Failure to do this will allow water to penetrate through the gaps and to enter the wall cavity.
3. Sealants must conform to the Joint Design and Expansion/Contraction Parameters specified by the sealant manufacturer.
4. Shim in a manner that reduces frame rotation under loading (wind, settlement, rough frame motion).
5. Fasten to the rough opening in a manner that does not put undo stress on the fenestration components and anchors the product into the opening so it will not be dislodged.
6. Install the fenestration product square, plumb and level. It shall not have sags or bows that hinder the proper operation of the product product components.
7. Apply all flashing in a shiplap manner and tie into the weather plane of the building.
8. Move the flashing failure point as far as possible from the interface of the rough opening and the fenestration product.
9. Protect the head of the fenestration product from the accumulation of water.
10. Any flashing or pans used must self-seal if penetrated by nails, staples or screws.
11. Reduce all air flow around the fenestration product to the lowest level possible.

Additionally, Corwin says, it is critical that an architect or structural engineer design the window installation for sill heights more than 35 feet above ground level and for construction methods other than fully-sheathed walls or open stud walls because openings over that height are subject to wind loads that may be in excess of the normal installation design.

'Better' Building Has Caused the Problem

Ironically, "better" building is a major contributor to the problem.

Modern construction techniques have changed dramatically. Energy conservation requirements have led to many changes, focusing primarily on air-tight structures. This drive has dramatically improved the energy efficiency and comfort level in modern homes. It has also sharply reduced the "breathability" and airflow of those homes.

It is common for homes and commercial buildings to be fully wrapped from floor to floor with a single sheet of nine-foot building wrap, like polyester weather-resistant barrier, in contrast to the traditional approach of multiple strips of three-foot-wide building paper.

Many homes also have a vapor barrier on the interior. As a result, air no longer moves through the wall structure and homes, generally, are no longer drafty. When air could move easily through the wall structure, any water that entered the wall would dry out in a relatively short period of time. Today, however, water entering the wall does not dry out quickly and may lead to the conditions that result in fungal infestation.

In addition to retarding natural drying within the wall structure, the increased air tightness of modern structures frequently leads to reduced air pressure inside the structure when air exhaust systems (kitchen and bathroom ventilators, furnace and water heater exhausts and clothes dryers) push air out faster than it can enter the structure. This reduced air pressure acts as a vacuum, sucking in air wherever there is a crack or hole in the wall structure.

The smallest cracks and holes experience a capillary effect in which the surface tension of water can pull water long distances into the cracks. The consequence: when water (from rain, snow, ice melt, sprinkler overspray, etc.) is running down the outside of the wall or window, it can be drawn through openings into the structure, leading to increased risk of water damage and fungal infestation. ■

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The article continues online at: archrecord.construction.com/resources/conteduc/

To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, contact Joyce Richter at JELD-WEN, (800) 535-3936 or email joycer@jeld-wen.com. The following quiz questions include information from this material.

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

- *Have a broader awareness of the changes underway in the U.S. window industry.*
- *Understand the methodology of successful window installation.*
- *Appreciate the role architects must play to insure "leak-free" structures.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 386. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

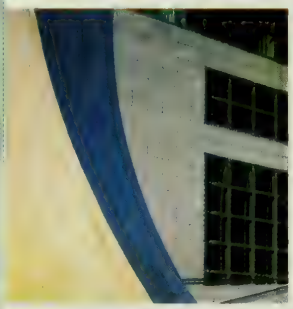
1. The use of sill pans is now a code requirement in all new residential window installations.
 - **a.** true
 - **b.** false
2. The increased air-tightness of contemporary structures may:
 - **a.** create air pressure differences that lead to a capillary effect, drawing water into the structure.
 - **b.** result in air pressure differences that may burst dual-pane windows.
 - **c.** make it difficult to keep pilots lighted, leading to potential fire hazards.
 - **d.** occasionally make it necessary to leave a window cracked on the down wind side of the structure.
3. California's controversial "right-to-repair" law, at last report had become model for similar legislation in how many other states?
 - **a.** none
 - **b.** four
 - **c.** 17
 - **d.** 32
4. Recent amendments to the International Residential Code require that windows be installed:
 - **a.** according to ASTM E2112
 - **b.** in accordance with manufacturers' written installation instructions
 - **c.** according to industry "best-practices"
 - **d.** only under supervision of the design engineer
5. Which of the following "general errors" are seen to be among the "root causes" of a majority of installation failures?
 - **a.** failure to tie the water plane of the window into the weather plane of the wall
 - **b.** failure to properly shim and attach the fenestration product into the rough opening
 - **c.** failure to understand the long-term performance and compatibility of products used in the installation
 - **d.** all of the above
6. According to one West Coast window manufacturer, what percentage of "water intrusion claims" are, either fully, or in part, due to faulty installation?
 - **a.** about half
 - **b.** very few
 - **c.** nearly 73 percent
 - **d.** virtually all
7. In construction defect litigation, the allegation of design deficiencies arises, according to attorney Richard Sieving:
 - **a.** only when architectural detail of installation components is insufficient
 - **b.** in virtually every case
 - **c.** most often in design-build projects
 - **d.** more often in the commercial, than the residential arena.
8. Insurance companies tend to cover personal injury claims involving mold more readily than they do defective construction claims.
 - **a.** true
 - **b.** false
9. Older homes are less susceptible to mold infestation than new homes.
 - **a.** true
 - **b.** false
10. Specifications defined in ASTM E2112:
 - **a.** provide assurance against water leakage
 - **b.** are minimum standards that will not ensure an installation's effectiveness
 - **c.** are identical, in most cases, to manufacturers' installation instructions
 - **d.** may be overlooked if you are working with a licensed installer

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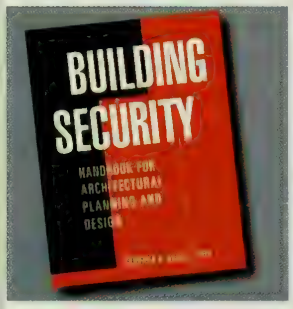
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Ceramic Tiles of Italy



Paul L. Cejas School, Miami, FL
Bernard Tschumi Architects

THE ITALIAN TRADE COMMISSION PRESENTS

Italian Tile:

Classical elegance without environmental expense. Sustainability is the new focus of ceramic tiles of Italy.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Italian Tile.** To earn AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 321, then follow the reporting instructions on page 387 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Have a better perspective on the international response to the issue of sustainability.*
- *Understand the degree of commitment of Italian tile manufacturers to the green building movement.*
- *Evaluate ceramic tile in terms of durability, stain resistance, etc.*

"It has been estimated that if the rest of the world were to consume like the developed world, we would need the equivalent of four extra Earths..."
—S_tiles

As part of their activities to promote the knowledge and use of Italian ceramic tiles, the Italian Trade Commission and Assopiastrelle, the Association of Italian Tile Manufacturers, have started a communication campaign aimed at introducing the new characteristics of Italian ceramic tiles, especially with reference to the subject of "sustainability."

The popularity of "green" building has been gaining momentum because of a groundswell of architectural awareness, a deep commitment by vocal members of our profession and widespread acceptance of the perceived virtues of sustainable building.

In late March 2004, the Italian tile industry kicked off a major international campaign it is hoping will push the eco-awareness of the design community even further and address other social and safety issues.

The intent of S_tiles (www.S-tiles.it), the Italian tile industry's new website, unveiled at Coverings 2004 in Orlando, is to tighten the ties of the industry to the international sustainable building movement. It is also a lengthy and detailed, in-your-face, consciousness-raising manifesto.

"It is imperative that sustainable building and construction becomes a major focus of the global sustainable development debate," says Roberto Luongo, executive director for the U.S. at the Italian Trade Commission. "The building and construction sector is one of the largest resource consumer and waste producer in the economy," he adds.

Buildings, according to the S_tile narrative, not only contribute significantly to greenhouse gas emissions in their construction phase, but the energy consumed for their use and maintenance is among the most consumptive of all activities on the planet.



Yoder House, Phoenix, AZ / MPJ Design Studio

The modern buildings in which we work rival well-known polluters such as cars and factories as sources of harm to the environment, adding greatly to deforestation, global warming, overuse of water and energy and carbon dioxide emissions, say ceramic tile industry sources. The organization cites a 1995 Worldwatch Institute report that concluded that:

- *55% of wood cut for non-fuel use was destined to be used in construction.*
- *40% of global materials and energy were used by buildings.*
- *30% of newly built or renovated buildings suffer from "sick building syndrome," exposing occupants to stale, moldy and chemical-laden air.*

In every country in the world, the built environment normally constitutes more than half the total national capital invested, and construction represents as much as 10% of GDP (gross domestic product). In many developed countries, in terms of weight, it accounts for up to half of all raw materials taken from the earth's crust. It also accounts for a considerable waste stream. In Europe, says the organization, 40% of all energy use is devoted to the built environment. "The percentage rises to as much as 50 percent in some countries, when construction activities, including material production and transport, are also taken into account."

Those numbers are evidence of the fact that mainstream architecture is still deeply embedded "in the 'modernist, constructivist' tradition," says James Wines, head of Manhattan-based SITE Environmental Design and author of the best-selling *New Wave Organic Architecture*, now in its fourth printing.

"In an 'energy-consciousness' sense, ninety percent of our mainstream designers are as anti-environmental as you can be," says Wines. "We, in architecture, are still dominated by early twentieth-century influences. "Nobody in the visual arts would be caught dead admitting he was a 'cubist,' but mainstream architecture is still trapped in the cubist era."

The Sustainability "Reformation"

The European Commission, jointly with member states and the building industry, in 1999 launched its Action Plan for Sustainable Construction. The plan was developed within the context of COM (97)539, Communication of the Commission on the Competitiveness of the Construction Industry. The purpose of the document was to create a list of priority actions to increase the competitiveness of the European building sector, while, at the same time, taking into account the issue of sustainability. The essential elements of the plan:

- *eco-compatible construction materials.*
- *energy-efficient buildings.*
- *construction and demolition waste management.*

These elements all are part of the Italian tile industry's sustainability "reformation."

Ceramic tiles may justifiably be considered a low environmental-impact material, especially when compared to other floor and wall coverings. This evaluation takes into account the different phases of the entire life-cycle of tiles from the mining of raw materials (the "cradle"), through buildings and coverings, to its final disposal or re-use in the environment (the "grave").

Ceramic tiles are obtained by raw materials widely available in the earth's crust, in particular, clay, feldspar and quartz. They are non-renewable materials, but do not require or justify particularly expensive or environmentally harmful operations of separation or enhancement in the extraction phase.

The emphasis today is on elimination of waste at all levels of the production chain and consumption with a eye toward reduction of impact on the environment and "social equilibrium."

The amount of thermal and electrical energy used to produce a ton of ceramic tiles today is less than half the amount used in the 1970s, though the Italian tile industry has more than doubled its production. Although the production of ceramic tiles is energy intensive—the final stage of production involves heating tiles to a temperature of between 900 degrees C to 1250 degrees C with Fast Firing technology—industry-specific energy consumption was reduced by nearly sixty percent during the 1980s as a result of technological innovation and attention to inefficiencies in production processes.

To achieve that end, the 18 largest ceramic tile manufacturers and largest volume energy consumers in Italy's ceramic district in Sassuolo, Modena, outside of Bologna, have hired an energy manager whose role is the oversight of all manufacturing processes. Among the recent innovations are these: the recovery and use of heat emissions from production plants, increased reliance upon cogeneration and the creation of a database of industry energy consumption.

About 30 Italian tile production plants now take advantage of cogeneration, which augments efficiency in electrical and heat production while, at the same time, reducing emissions. Despite the twofold increase in production, carbon dioxide emissions remain at 1980s levels, Italian tile manufacturers say.

Italy's ceramic district also has made a significant investment over the past 10 years in an effort to substantially reduce water consumption. District plants, almost without exception, now reuse, either directly or indirectly, all wastewater and all production and depuration fragments, saving both water and raw materials. Plants outside Sassuolo and Scandiano, with a potential water demand of nearly 8.1 million m3 per year, are limited to 4.3 million m3 and derive the balance of their needs through reuse.



Hôpital de Jolimont, La Louvière, Belgium / Atelier d'Architecture DDV, Nivelle

Ceramic company water demand remains fairly high and ranges, depending on the technology cycle used and on the different types of product, from a minimum of 8-18 m3/1000 m2 for ceramic tiles produced with a double-firing cycle to a maximum of 800 m3/1000 m2 for the polishing phase. Current water recycling practices have lowered water consumption from a minimum of 2–6 m3/1000 m2 for to a maximum of 7–15 m3/1000 m2 for polished porcelain stoneware.

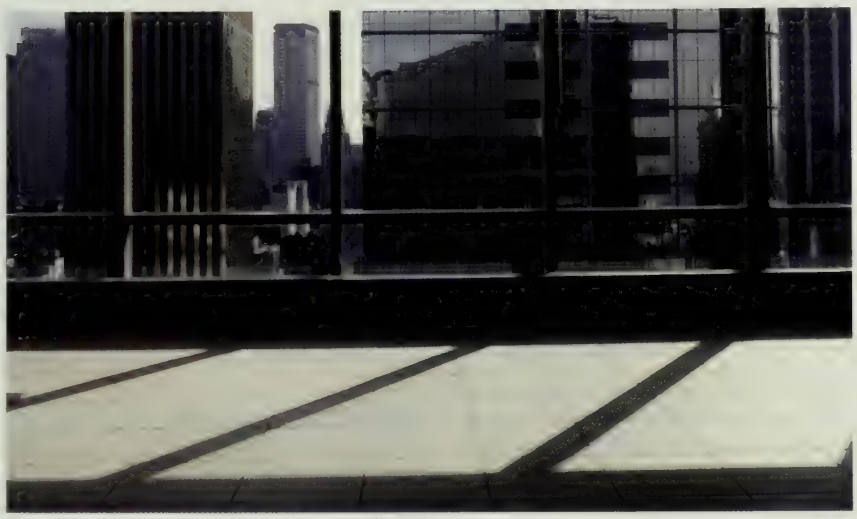
A program of waste minimization, based upon a new mandate of "process and resource efficiency" begins at quarry sites and is carried through the manufacturing process. Potentially toxic materials which have been part of the historical manufacturing process, like lead and cadmium, which traditionally was used in glazing, have been abandoned in favor of substitute materials less harmful to the environment.

Unlike other production sectors, the ceramic industry, and especially the tile industry, is able to recycle and "digest" the greater part of the waste it produces—even tile fragments and dust. Tile dust is separated from gaseous emissions in separation devices known as "depurators," as is waste produced in the water treatment process. Manufacturing plants now reuse virtually all of their production waste and fragments, saving considerable quantities of raw materials and avoiding large-scale waste disposal.

What is known as The Sustainability Progress Report of 1998 paints an informative picture of the recycling and reuse flows of plant production waste in the Sassuolo/Scandiano tile district. So-called "raw waste" that in 1997 was on the order of 719 kg waste/1000m3 of product was entirely reused within the plant or by at other production sites. Four of five plants now reuse "scrap-fired tiles." Some waste finds usefulness as a stabilizing agent for road foundations. Inert waste from building demolition is often reused in the same way.

Slaked lime depuration is the most difficult waste to reuse. Three out of five plants in the Sassuolo/Scandiano district still send slaked lime wastes to dump sites. Liquid sludge, however, is reused within the originating plant or by other plants in two out of three cases.

"If you look at tile objectively it is still a fire-based material," says Wines. "It takes a lot of energy to produce, and a lot of energy to transport it. Its greatest ecological value is that it lasts forever. In Sicily, we see tile floors that are almost 2,000 years old and they look almost new."



Reuters, New York, NY / Swanke Hayden Connell Architects



Piazza San Giminiano / San Giminiano, Italy

Characterizing Tile

Ente Nazionale Italiano di Unificazione (UNI EN), Italy's standards organization, regulates a wide range of products with very different uses. It divides tiles into eight groups, depending on their water absorption and shaping of the backing method. It also provides a design guide to determine which materials may best be used in varying situations.

In general, ceramic tiles are unsurpassed by any other finishing material because of the following characteristics:

- Ease of maintenance.
- Mechanical resistance and resistance to load, shock, deflection, erosion and scratching. Ceramic tiles' mechanical properties and the outstanding surface performances of vitreous glazing make them a highly attractive material in a variety of situations.
- Impermeability to liquids and resistance to chemical substances. The UNI EN classification provides a measure of porosity and resistance to stains (and chemical agents, in general).
- Fire resistance.
- Resistance to thermal shocks and temperature changes. Varying characteristics are obtained through shaping and through advanced glazing techniques, enabling ceramic tiles to adhere even where there is dampness or other external factors.
- Durability and stability over time: architects and designers use ceramic and glazed ceramic porcelain tiles to meet any technical or aesthetic exigency, knowing the surface will not degrade. In comparison to other finishing materials, tiles have excellent resistance to light and maintain their color for a comparatively long period. Moreover, they can undergo heavy cleaning without being damaged.
- Salubrity: dusts, odors, smoke, germs, pollens do not penetrate the glazing. Moreover, dust does not generally accumulate on ceramic tiles, making them low maintenance.
- Anti slip.

Tile quality is indicated by technical values printed in catalogues and on boxes. These values are the result of tests carried out according to the UNI EN European standards. By evaluating tiles at the outset according to classifications, designers may avoid unpleasant surprises as the job unfolds:

- PEI numbers indicate the resistance to erosion of glazed tiles. Tiles are classified in values ranging from 1 to 5, one being the lowest resistance, 5 the most highly resistant.
- Classes 1,2,3,4,5 characterize stain resistance. Class 5 is the most highly stain resistant. In general, Class 5 tiles may be cleaned with warm water, Class 4 tiles may require a soft detergent and Class 3 tiles may require strong mechanical cleaning or chemical action to eliminate stains. Restoration of Class 2 tiles may require a solvent bath, and Class 1 tiles may not be recoverable.
- Classes A,B,C and D indicate the resistance of the tile to the action of strong acids and cleaning products. "A" is the most highly resistant; "D," the least.

Confronting "Sick Building Syndrome"

It is widely known that the problem of building contamination is a chief cause of so-called "sick building syndrome" and is responsible for many allergies and pathologies. Toxic or harmful substances—like dust, pollens, spores and bacteria as well as pathogenic germs and bacilli—can be brought indoors by building materials and furnishings, or may be blown in from outdoors.

U.S. Environmental Protection Agency (EPA) studies of human exposure to air pollutants indicate that indoor levels of pollutants may be 2-5 times, and occasionally more than 100 times, higher than outdoor levels. These levels of indoor air pollutants may be of particular concern because most people spend about 90 percent of their time indoors.

Modern buildings clearly have a problem in providing a healthy or even appropriate indoor environment. The EPA concedes that about 30 percent of new or renovated buildings have serious indoor air quality problems (IAQ), and ranks IAQ as the nation's most prominent environmental problem.

In its 1999 Guidelines for Air Pollution Control (revised September 2000), the World Health Organization underlined the concerns of the EPA, noting that indoor air pollution is the primary cause in as many as 50 million cases of occupational chronic respiratory disease each year, accounting for one-third of all occupational illnesses.

There are several design strategies that can be used to deliver good indoor air quality.

Controlled ventilation, properly considered design, and the use of healthy building materials can provide good indoor air quality if used as part of a holistic approach.

Among materials available to designers today, those best described as low-emitting are preferred. Ceramic materials, being chemically and physically inert as a result of their high temperature thermal treatment at the end of the manufacturing cycle, outperform every alternative in avoiding contaminating substance emissions.



Parco Delle Querce, Crispano, Italy / Martino Colucci with Cosimo Petronella

Whatever the chemical composition of the tile surface or, in the case of glazed tiles, the glazing, the structural properties of ceramics resulting from the firing process prevent any emission or dispersion of metals contained within the tile or glazing. Emissions resulting from adhesives may be eliminated by attentive installation.

By the nature of its construction, carpet retains far more dust and other pathogenic agents than tile. Several research studies have singled out carpet as the responsible agent in a variety of breathing diseases. Some suggest that up to 90 percent of asthma cases in children can be attributed to carpets. Ceramic tiles, with their hard, inert, compact, non-filamentous surface, and resistance to heavy cleaning, have all the features to ensure easy cleaning and effective hygiene, even in environments subject to poor hygiene.

A growing concern in many cold-climate countries is the growing number of studies that link allergies, immune-depression and other illnesses to the amount and type of fungal growth in a building. By avoiding surface coverings where humidity levels are in excess of 80 percent RH, fungal spores, unavoidable in all buildings, will be starved of the moisture they need to survive. Mold growth within the building envelope can also affect health if an interior air barrier is not present. Mold will only grow on ceramic tiles if soap or skin residue remain on their surface.

The Issue of Safety

Safety is one of the essential requisites of the Directive on Building Products (89/106/EC). The characteristics determining the compliance of tiles are two: *fire and slip resistance.*

Exposure to the high temperatures fires potentially reach does not generally damage ceramic materials. A ceramic floor or covering when in contact with flames is not damaged, does not propagate or feed the fire, does not produce or emit toxic substances, gases or vapors of any kind. Where there is a risk of fire, ceramic tiles perform better than most other covering or flooring materials (in particular wood, cork, carpet, vinyl, etc.). Moreover, it has been experimentally proven that, in cases of fire, ceramic coverings provide good protection to the structures they cover, considerably lowering the thermal stresses the structures would otherwise be subject to.

The risk of accidents due to the slipperiness of floors is an issue that until recently had been underestimated, yet is becoming more important. The reasons for this are: the enforcement in several countries of specific measures to prevent such accidents, and the growing public demand for safe products in the home, workplace and public areas. Especially when undergoing intense traffic flows, paving—indoors or outdoors—should be designed to prevent accidents and ensure users of safe conditions. Ceramic tiles respond to that need without compromising other technical or aesthetic issues.

To measure the degree of slip resistance, specific national standards have been established (DM 236 or DIN 18025). To obtain UNI certification, compliance with these standards is necessary. Ceramic tiles, and more particularly porcelain tiles, can be designed with very effective anti-slip surfaces. Certain factors, however, should be taken into account to ensure adequate anti-slip performance in the flooring or walkway surface:

- **Conditions of Use:** bearing in mind the variation in degree of slipperiness according to the wet or dry or dirty conditions, designing an appropriate maintenance regime is crucial to maintaining the original characteristics of the paving under all conditions.
- **Choice of Materials:** decide which is the more appropriate surface finish according to its intended use. In particular, analyze the potential degree of wear-and-tear.
- **Installation:** a well-designed flooring may be seriously compromised—especially in terms of safety—if the installation is not done to the highest standards. Slight, unexpected slopes, a subsiding surface or any imperfections increase the risk of accidents. ■

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AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Have a better perspective on the international response to the issue of sustainability.*
- *Understand the degree of commitment of Italian tile manufacturers to the green building movement.*
- *Evaluate ceramic tile in terms of durability, stain resistance, etc.*

INSTRUCTIONS

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QUESTIONS

1. In Europe, what percentage of energy use is devoted to the "built" environment?
 - **a.** 32 percent
 - **b.** 69 percent
 - **c.** 17 percent
 - **d.** 40 percent
2. Ceramic tiles are unsurpassed as a finishing material because of which of the following characteristics?
 - **a.** Fire resistance
 - **b.** Salubrity
 - **c.** Sensitivity
 - **d.** Impermeability
3. In the last few years, the Italian ceramic tile industry has reduced pollutant gas emissions in production processes by more than:
 - **a.** 90 percent
 - **b.** 17 percent
 - **c.** half
 - **d.** emission reductions are planned beginning in 2007
4. Which grade of tile is most strongly resistant to stains?
 - **a.** A
 - **b.** B
 - **c.** C
 - **d.** D
5. Which of the following are not a part of the European Commission's "sustainability" agenda?
 - **a.** the reduction of the impact of raw materials extraction on habitats
 - **b.** the rational use of resources
 - **c.** the reduction of particulates discharges on a scale relative to the GDP
 - **d.** the management and recovery of wastewater during production
6. Fiber-optic technology has enabled tile walkways that are visible in the dark.
 - **a.** true
 - **b.** false
7. The most difficult waste product of tile production to reuse is
 - **a.** calcinate
 - **b.** ammonium nitrate
 - **c.** slaked lime depurate
 - **d.** sludge
8. The Italian tile industry has grown more "sustainable" through which of the following:
 - **a.** the recovery and use of heat emissions from production plants
 - **b.** increased reliance upon hydro-electric power generation
 - **c.** the creation of a database of industry energy consumption
 - **d.** increased reliance upon cogeneration
9. Ceramic materials are chemically and physically inert as a result of their high temperature thermal treatment at the end of the manufacturing cycle.
 - **a.** true
 - **b.** false
10. The three grand prize winning architects in the Ceramic Tiles of Italy Design Competition Award 2004 were:
 - **a.** Edward R. Jones
 - **b.** David P. Brems
 - **c.** William McDonough
 - **d.** Bernard Tschumi

ABOUT THE ITALIAN TRADE COMMISSION

The **Ceramic Tile Department** of the **Italian Trade Commission** in New York, in its twenty-fourth year of operation, is the source for up-to-date information on Italian ceramic tiles as well as a major link between Italian manufacturers and the American market.

Information on the Italian ceramic tile market, on Italian manufacturers and their distributors in the U.S. can be easily found by visiting the Italian Trade Commission website: www.italytile.com

This department collaborates closely with the Italian association **Assopiastrelle**, which represents Italian Ceramic Tile & Refractory Manufacturers, to provide technical information as well as assistance in locating Italian ceramic tile manufacturers in the United States.

The Italian Trade Commission would like to thank Assopiastrelle (www.italiatiles.com) and the Italian Ceramic Tile Industry for its dedication to Sustainability (S_tiles®) and to their invaluable assistance in preparing this document. For more information, please visit their website dedicated to Sustainability and Ceramic Tiles: www.s-tiles.it.

Italian Trade Commission
Government Agency

Italia
Life in Istyle

Ceramic Tiles of Italy

All photographs in this section by Miro Zagnoli.

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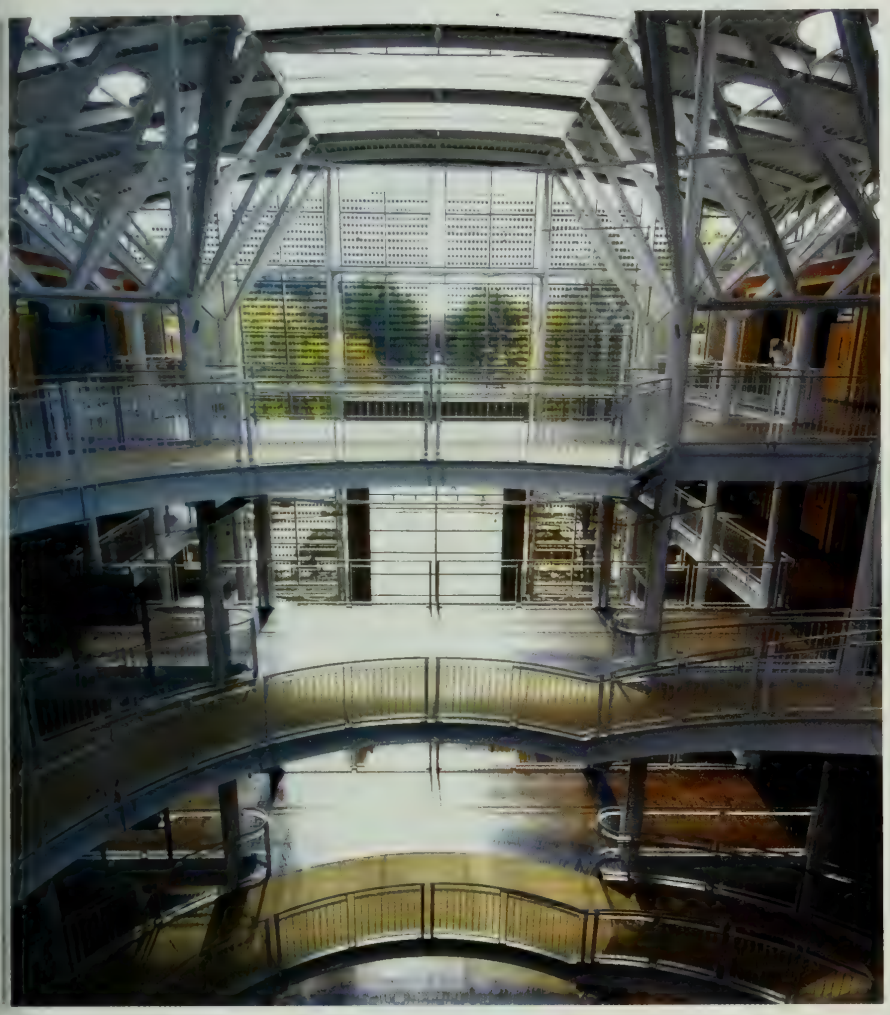
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THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. PRESENTS

New tools for specifying architecturally exposed structural steel

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **New tools for specifying architecturally exposed structural steel.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 327, then follow the reporting instructions on page 388 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

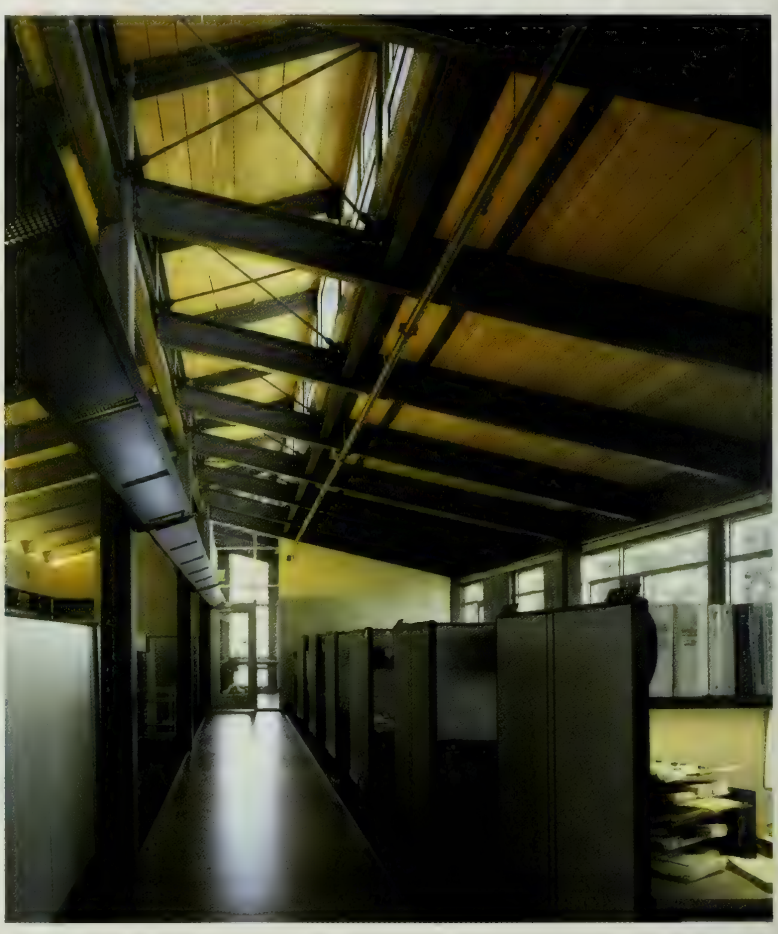
- *Improve your ability to effectively design, specify, and budget architecturally exposed structural steel.*
- *Understand the cost and desirability of specific conditions.*
- *Incorporate specification language agreeable to both designers and specialty steel contractors*

While exposed structural steel was once the select province of a few noteworthy projects, architects today are increasingly using transparency in their design. While not a new trend, the use of exposed steel seems to have picked up steam in the last decade—beginning with Helmut Jahn's United Airlines Terminal in Chicago and continuing with Frank Gehry's museums and concert halls. But today its not just monumental structures—it's everything from small retail stores to office lobbies.

Unfortunately, existing codes and standards—even the American Institute of Steel Construction's Code of Standard Practice—do not fully address the unique level of detail needed to successfully design, detail, fabricate and erect Architecturally Exposed Structural Steel (AESS). Further, because AESS costs more to fabricate than standard structural steel, it is critical that these designs are properly budgeted. The repercussion of not properly budgeting AESS is often the need for redesign, project delays, and ultimately even higher project costs. In addition, the members requiring special handling and finish are often poorly identified in the contract documents—and, since the structural engineer often specifies the steel while the architect specifies the paint and appearance, there is sometimes a built-in conflict or compatibility issue. Finally, the lack of acceptance criteria for AESS members often leads to disputes between the design team and the contractor over what is desired versus what was bid.

In response to these issues, the Steel Liaison Committee of the Structural Engineers Association of Colorado and the Rocky Mountain Steel Construction Association, with input from local contractors and architects, developed guidelines to assist in the specification of AESS. According to the Committee: "The goal of these tools is to allow the designer to communicate the desired appearance in a format that contractors can price/budget/bid more appropriately."

The guidelines include three key elements (a sample board, cost matrix, and a proposed specification), most of which can be accessed in their entirety and at no charge by visiting www.aisc.org/aess.



"The goal of these tools is to allow the designer to communicate the desired appearance in a format that contractors can price/budget/bid more appropriately."

Two award-winning examples (pictured here and on page 323) of architecturally exposed structural steel are the University of Oregon's Lillis Business Complex in Eugene, OR, and the Oregon Department of Forestry's new Operations Building in Salem, OR, both of which were designed by SRG Partnership, Inc., Portland, OR. Photos by Rick Keating Photography.

Sample Board

The sample board includes small pieces of fabricated structural steel that indicate a range of finish surfaces that can be expected from structural steel fabricators. The board includes bare steel with fabrication "defects" and pieces with typical finish coats. The samples are intended to allow the designer to see how various fabrication techniques affect the final product. The goal of the sample board is to allow the designer to decide what features are important for their project. Physical samples allow the designer to evaluate how imperfections in the finished surface appear from various distances. (Detailed photographs from the sample board can be viewed by visiting www.aisc.org/aess. However, due to reproduction technology limitations, they are only representational of finished appearances. Fortunately, designers or contractors wishing to obtain an actual sample board can purchase one from Zimkor Industries for $1,780 by contacting William Zimmerman at wgzimmerman@zimkor.com or 303.791.1333.)

Cost Matrix

Of course, knowing the appearance of the final steel is only half the story. Equally important is knowing the budget impact of AESS. The cost matrix is intended to provide the designer with the cost premium associated with specifying the desired techniques to achieve the final appearance of an AESS project. The cost of producing work to a higher appearance standard varies greatly from fabricator to fabricator, depending on the equipment in the shop and the experience of the staff. This variation is indicated in the cost matrix as a range of cost premiums for each desired fabrication technique or finish coat item specified. The cost premiums noted apply to the total weight of AESS for that particular line item, fabricated and erected. While the cost matrix was prepared initially by surveying fabricators in the Rocky Mountain region, the figures have been further checked through surveying a select group of national fabricators. The idea behind the cost matrix is to allow a designer to balance a project budget with the desired project scope. As a result, several design iterations might be required. Also, it is imperative that a designer contact a local fabricator for more detailed pricing as the project becomes more defined. (The cost matrix can be viewed by visiting www.aisc.org/aess.)

Specification

SEAC/RCSCA has prepared a generic specification that includes many common fabrication and erection techniques to help communicate a designer's expectations to the fabricator. (The entire specification can be downloaded at no charge by visiting www.aisc.org/aess.) The specification includes a number of editor's notes to provide guidance. The headings in the specification are coordinated with the information from the cost matrix and sample board. The intent of the specification is to provide a consistent mechanism to define appearance quality requirements that were selected with the sample board and budgeted with the cost matrix. The primary scope of the project was to offer a common language to address the appearance issues of structural steel used in exposed locations. Although many of the finish issues are common to miscellaneous metals, stairs and railings, the specification is not written to cover all of these items. Furthermore, there are numerous performance topics such as jointing for thermal movements, waterproofing and fire resistance which this document does not address. Any comments or suggestions on how the Specification can be improved or modified should be sent to Jack Petersen at jpetersen@martinmartin.com.

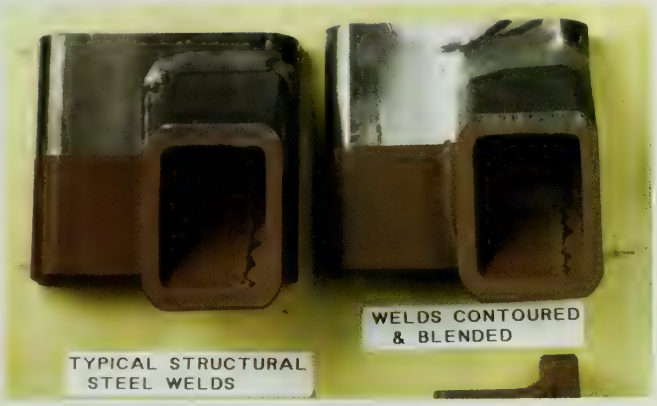
Should I Specify "Welds Ground Smooth"?

A fairly common request on projects with Architectural Exposed Structural Steel is for welds to be ground smooth. But what does that really mean? How do you specify it? And what's the cost impact?

Specifying "welds ground smooth" has a significant impact on the appearance of steel (see photo), though once you get beyond about 20, the effect is minimized (for example, exposed steel at ground level compared with exposed steel near a roof line). And, as an examination of the sample board reveals, grinding the weld smooth does not always enhance appearance, since the process.

The SEAC/RCSCA sample specification states that the fabricator and/or erector shall grind welds of AESS smooth. For groove welds, the weld shall be made flush to the surfaces each side and be within $+^{1}/_{16}$th, -0" of plate thickness.

It's important to remember that there may be a significant cost impact associated with grinding welds smooth and it should not be specified indiscriminately. In fact, according to the AESS cost matrix, specifying "welds ground smooth" can add 10%-20% to the fabrication and erection cost. Another consideration is that: "In a standard structural steel frame, the welds are left in an as-welded condition with the slag and weld spatter removed. For AESS frames, the process is the same. Should smooth grinding of the welds be required, this classification should be specified. It is important to note that in many cases, grinding the weld will leave a blemish that is more obvious than the unground weld."



What Level of Surface Preparation Should I Specify?

Surface preparation is the most important—and often the most costly—step in providing a good finish on AESS. Unfortunately, it is often misunderstood. A level of surface preparation is associated with each type of finish coat. It is critical that the correct level of preparation be specified on the contract documents to avoid change orders during construction.

Surface preparation is done in accordance with a specification prepared by SSPC: The Society for Protective Coatings, and is indicated by a numerical designation. While the numbers are not sequential, a higher number does include the processes indicated in the levels below (for example, the SSPC-SP 6 specification includes the requirements of SSPC-SP 3).

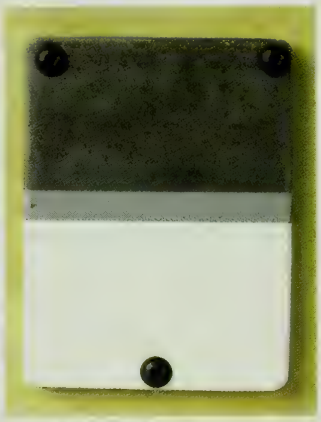
The sample specification and cost matrix notes provide the following information about surface preparation (see photos for visual information about SSPC-SP 3 and SP 6):

- **SSPC-SP 1 - Solvent Cleaning**
- **SSPC-SP 2 - Hand Tool Cleaning:** (This level of surface preparation will not be adequate for most paint systems for AESS construction.)
- **SSPC-SP 3 - Power Tool Cleaning:** Power tool cleaning removes all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter using power tools. This process requires that Solvent Cleaning (SSPC-SP 1) be performed prior. It is not intended that adherent mill scale, rust and paint be removed by this process. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. (This level of surface prep is the minimum for most AESS projects. It may be acceptable for alkyd primers and acrylic or alkyd finish coats, particularly in interior applications.)
- **SSPC-SP 6 - Commercial Blast Cleaning:** A commercial blast-cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter. (This level of surface prep adds significantly to the total cost of the steel. It is required for epoxy primers to allow adequate bonding to the steel. Recommended for locations where a rust inhibitive primer will be used in an exterior application. It is also required where polyurethane finish coats will be used over the primer.)

Regardless of the level of surface preparation specified, the result will not resemble the hood of a new automobile. It's critical to look at the sample board (or the photos available at www.aisc.org/aess) to get a true feel for the results of the surface preparation specified.



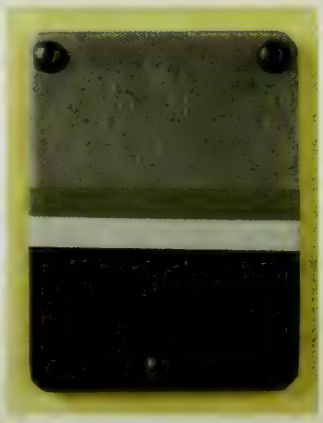
Finish A SSPC3
Low-end primer/finish coating: alkyd (oil-base) finish coat with a shop-coat primer over an SSPC-3 surface preparation.



Finish B SSPC3
High-end primer/finish coating: epoxy finish coat with an epoxy finish coat with an epoxy or zinc-rich primer, over an SSPC-3 surface preparation.



Finish C SSPC6
Low-end primer/finish coating: acrylic (water-based) finish coat with a shop coat primer over an SSPC-6 surface preparation.



Finish D SSPC6
High-end primer/finish coating: polyurethane finish coat with an epoxy intermediate coat and zinc-rich primer over an SSPC-6 surface preparation.



What Types of Coatings Should be Used with AESS?

There have been notable improvements in coating technology during the last decade and today's systems offer long life with improved environmental performance. However, it's critical that the specified primer be coordinated with the finish coat system to ensure coating compatibility.

Alkyds

PRIMER: Typically referred to as shop-coat primer, this product can come in many different levels of quality depending on the level of corrosion protect required. They are fast drying, enabling the fabricator to quickly deliver product to the job site. Standard alkyd primers can be finish-coated with an alkyd or water-based enamel. Universal alkyd primers can be used under high-performance coatings such as epoxies or urethanes. In general, for exterior exposure, a high-quality, universal, rust-inhibitive zinc-rich primer should be used. The increase in cost over a standard shop-coat primer is on the order of $5.00 to $10.00 per gallon. The material cost of the paint represents a small portion of the total painting cost, while the higher quality provides greater corrosion protection to the steel.

FINISH: Alkyds are an acceptable finish coat for interior applications and some exterior application and they dry to a hard durable finish. When specified for exterior use, alkyds will chalk and fade with UV exposure in a relatively short period. Alkyds can be brush, roll, or spray applied.

Acrylic

Acrylic primers are corrosion resistant and water-soluble, often providing a lower VOC. They are available in shop-coat quality up to a universal primer for use under high performance coatings such as epoxies and urethanes.

Acrylics are an acceptable finish coat for both interior and exterior service. Acrylics provide good color and gloss retention under UV exposure. They can be easily applied by brush, roller, or spray and offer low odor and VOC for interior application.

EPOXY PRIMER: Epoxy primers provide excellent corrosion protection for steel and can be top-coated with a variety of finishes. Epoxy primers can be applied in the shop and typically have a high film build that will hide minor imperfections.

ZINC-RICH PRIMER: Zinc-rich primer provides superior corrosion protection by providing cathodic protection to the steel. Zinc-rich coatings can be specified as either organic zinc or inorganic zinc. Both inorganic and organic will meet class B slip coefficients for bolted connections. In arid regions (such as the Rocky Mountain Region) organic epoxy/zinc primers should be specified, as they do not rely on an outside source (humidity) for cure. Inorganic zinc is often the preferred primer because it can be handled right away. However, it requires a constant humidity of no less than 40% RH for proper cure. If an intermediate and finish coat are to be completed in the shop, the lack of humidity can cause delays in both the painting process and project as the zinc must be cured prior to top-coating. Alkyd finish coats should not be specified over zinc primers. For galvanizing repair, an organic zinc with not less than 90% zinc by weight in the dry film should be used for re-galvanizing welds and damage due to erection.

Epoxy finish coats can be applied as a finish for interior use where abrasion resistance is required. The high-build nature of film can help cover imperfections in the steel; however, they will chalk and fade with UV exposure.

When possible, finish coating should be done in the field after erection. Finish coats applied in the shop almost always incur damage from handling in shipping and erection. This often results in applying an additional finish coat in the field or completing costly touch-up which often does not blend in with the original finish. Additionally, if finish painting is to be done prior to delivery of the steel, special sections should be added to ensure proper handling and minimize damage.

Click for Additional Required Reading

As part of this CES learning activity, you are required to read additional materials. Some of the test questions below will relate to the additional reading material. Go to **archrecord.construction.com/CONTEDUC/Conteduc.asp** to access the material online. To obtain a faxed copy of the materials, contact the Steel Solutions Center at (312) 670-5420 or email pascoli@aisc.org.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Improve your ability to effectively design, specify, and budget architecturally exposed structural steel.*
- *Understand the cost and desirability of specific conditions.*
- *Incorporate specification language agreeable to both designers and specialty steel contractors*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 388. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. AISC's Code of Standard Practice fully addresses the unique level of detail needed to successfully design, detail, fabricate and erect AESS.
 - **a.** true
 - **b.** false
2. Simply specifying "AESS" in your project specifications will give you which of the following treatments?
 - **a.** field welding aids removed
 - **b.** joint gap tolerances minimized
 - **c.** welds ground smooth
 - **d.** all of the above
3. If you simply specify "AESS" on your drawings without further detailed specification, what is the expected range of cost increase?
 - **a.** 10–20%
 - **b.** 27–60%
 - **c.** 42–90%
 - **d.** More than double
4. Grinding the weld will almost always improve the weld's appearance and will minimize any blemishes.
 - **a.** true
 - **b.** false
5. What is the minimum acceptable surface preparation for AESS applications?
 - **a.** SSPC-SP 1 - Solvent Cleaning
 - **b.** SSPC-SP 2 - Hand Tool Cleaning
 - **c.** SSPC-SP 3 - Power Tool Cleaning
 - **d.** SSPC-SP 6 - Commercial Blast Cleaning
6. When possible, finish coating should be done in the field after erection.
 - **a.** true
 - **b.** false
7. Which of the following is NOT critical in obtaining the architectural appearance desired at the best budget for an AESS project?
 - **a.** specifying an SSPC-SP10 "Near White Blast" surface preparation
 - **b.** having a pre-installation conference
 - **c.** obtaining a mock-up of the treatments specified
 - **d.** showing which members require AESS treatment in contract documents
8. Which of the following is NOT a special fabrication method that may impact the final appearance of the AESS?
 - **a.** contouring and blending of welds
 - **b.** maintaining a uniform joint gap of $^1/_8$" +/- $^1/_{32}$"
 - **c.** mill mark removal
 - **d.** turn of the nut method
9. Which of the following is NOT a special erection issue that may impact the final appearance of the AESS?
 - **a.** welds ground smooth
 - **b.** bolt head orientation
 - **c.** removal of field connection aids
 - **d.** pre-qualified field erection plan
10. What is the most important step in providing a good finish on AESS?
 - **a.** surface preparation
 - **b.** welds ground smooth
 - **c.** grinding of sheared edges
 - **d.** mill mark removal

About The American Institute of Steel Construction (AISC)

The American Institute of Steel Construction provides specifications and technical information that makes the design and construction of structural steel easier and more economical. As part of that goal, AISC is providing information on Architecturally Exposed Structural Steel developed by the Steel Liaison Committee of the Structural Engineers Association of Colorado and the Rocky Mountain Steel Construction Association.

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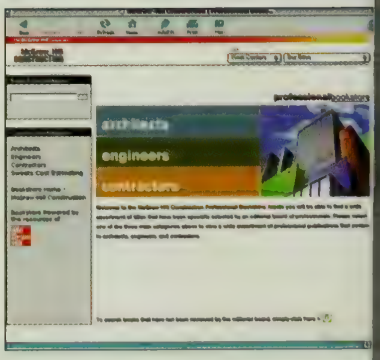
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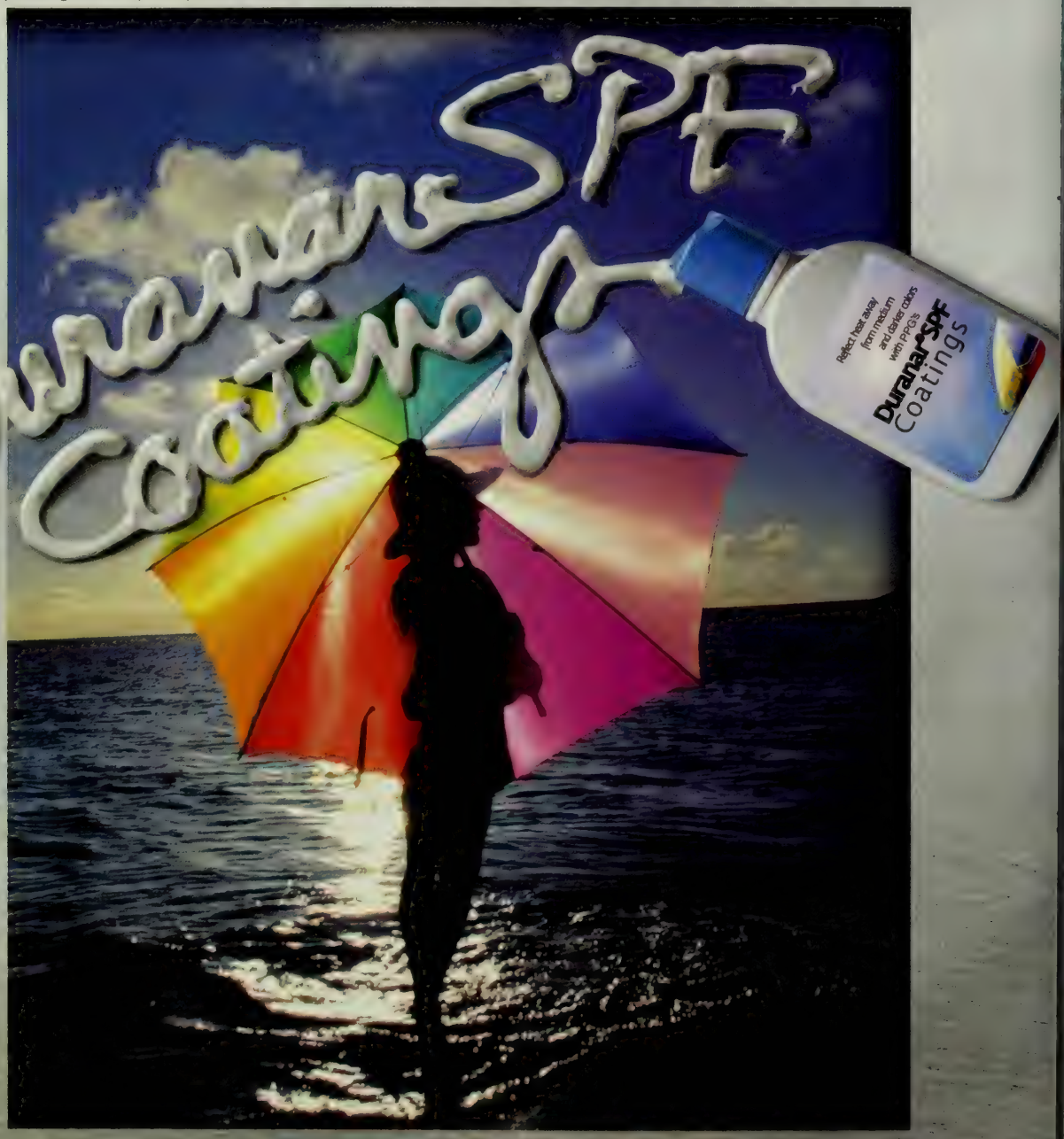
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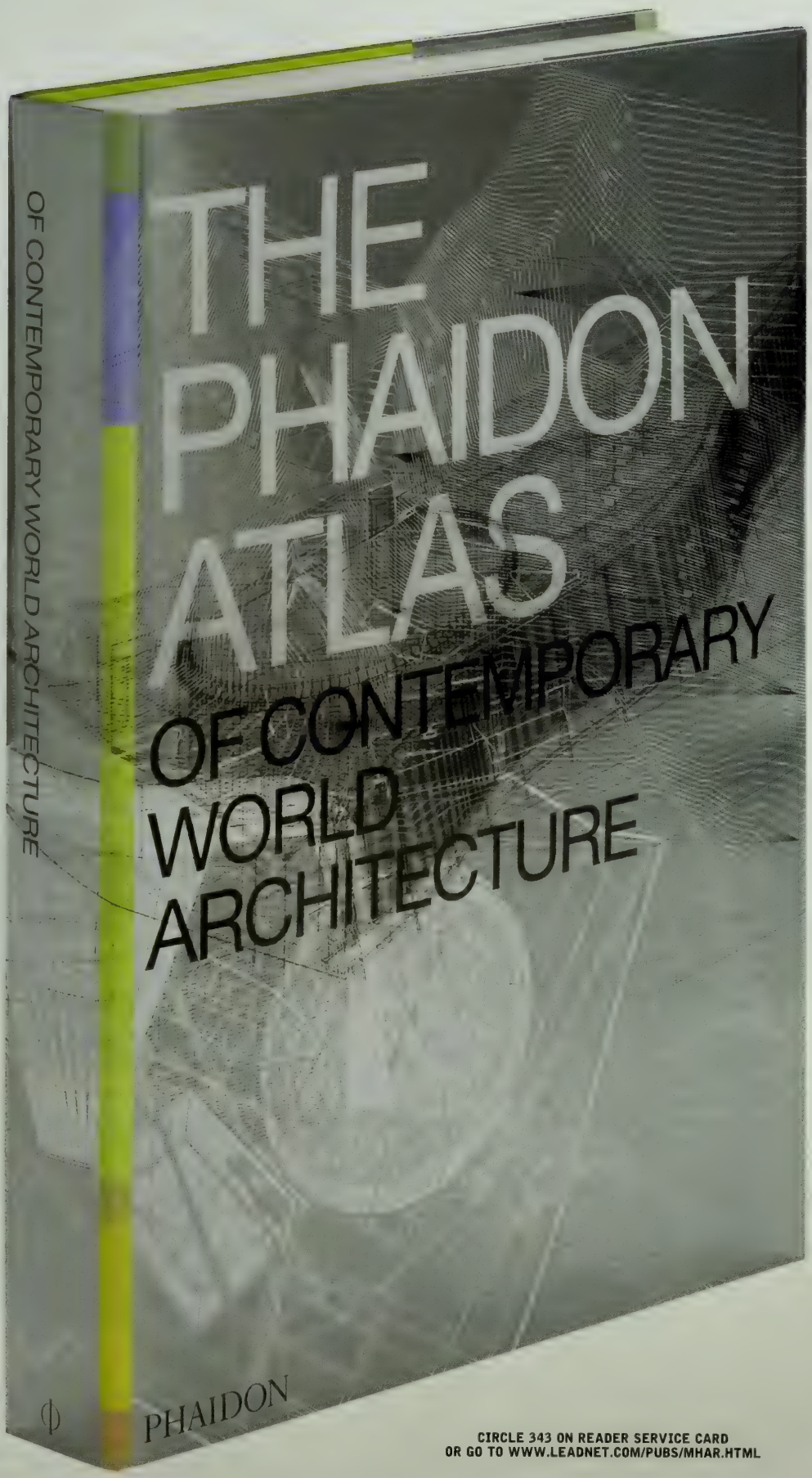


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Interiors

"Secretarial corridors" may have gone the way of the typewriter, but some offices look back to move forward

BRIEFS

French designer Charlotte Perriand is frequently mentioned as one of the most overlooked Modernist design talents of the 20th century. A longtime collaborator with Le Corbusier, Pierre Jeanneret, and Jean Prouvé, she worked for more than six decades perfecting tubular-style furniture that came to be known as "equipment for living." (She died in 1999 at age 96.) The **Princeton University Art Museum** spotlights her best work in a major exhibition, *Useful Forms: Furniture by Charlotte Perriand*, on view through July 11. Works in the show include a rare library table designed for the Maison de l'Etudiant in Paris and a free-form desk from 1960. Go to www.princetonartmuseum.org. *W.W.*

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352 Grip and Medium One, Toronto
Johnson Chou

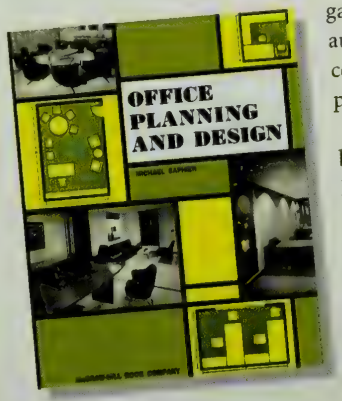
357 Product Design
Frank Gehry in Milan

359 Interior Products



A sign of the times, circa 1968: "Although the secretarial pools and the open work areas are both accepted principles in office planning," wrote author Michael Saphier, "on occasion it is necessary to provide partial privacy for some secretaries." This text, from a McGraw-Hill book published that year, *Office Planning and Design* (below), accompanied a photo in which secretaries and their bland desks were placed in a corridor and shielded behind 3-foot-wide, floor-to-ceiling sections of drywall, an arrangement that likely would not be considered congenial or productive today. (And don't support-staff personnel prefer the title of executive assistant these days?)

On the plus side, some of the book's tenets regarding office organization seem to hold up even 36 years later. And among the featured projects that were more progressive than the "secretarial corridor" was a private office's "roll-top room" that employed hinged doors powered by a garage-door mechanism to hide a research area. The automation was primitive, but the solution foretold today's continuing search for flexibility of form and a balance of private and public zones.



Among the offices we present this month, most look back to earlier times for inspiration. San Francisco–based Huntsman Architectural Group settled on Arne Jacobsen's Egg chair as an iconic touchstone for reinterpreting elements of midcentury Modernism for its own offices. Its colorful (dare we say, almost mod?) materials library, with Verner Panton chairs (above), doubles as a space available to community charities. Johnson Chou's conference room at Grip in Toronto is an illuminated "bubble" that evokes the sci-fi optimism of '60s space travel. Guillermo M. Gomez adopts a Mondrian-like palette for the office of a Broadway ad agency. Looking farther into the past, Traboscia Roiatti meditated on a vintage Veuve Clicquot champagne bottle, its shapely curves and orange label cuing abstract forms for a modern loft office. Times have changed, but the search for connections to shared history has not. *William Weathersby, Jr.*



Broadway advertising campaigns are projected on one wall of the EMG reception area as a focal point. Downlights create a play of color along the luminescent flooring, while red chairs rest against a glass wall.

Guillermo M. Gomez orchestrates color and flexibility for the Broadway advertising agency Eliran Murphy Group

By William Weathersby, Jr.

They say the neon lights are bright on Broadway," so the popular song goes. For the New York City–based media firm Eliran Murphy Group (EMG), whose business is designing advertisements and branding campaigns that help to make hits of Broadway shows like *Nine* and *Cabaret*, bright lights, bold colors, and exuberant flashes of creativity are its stock-in-trade. To present the agency's strong suit of design talent and marketing finesse within a new office near the theater crossroads of Times Square, Guillermo M. Gomez Architect (GGA) orchestrated a modern, energetic office that trumpets a striking new corporate identity.

"From the start, it was very clear what our business was and what our goals for the new office were," says EMG president/creative director Ann Murphy. "We wanted our architect to become involved from the very beginning, to bring in his ideas and listen to ours so we could work together to make the relocation project a success."

To foster a collaborative working relationship, Murphy and EMG C.E.O. Barbara Eliran enlisted GGA principal architect Guillermo Gomez to assist in scouting potential offices for the relocation from several overtaxed floors in midtown. Together they discovered a 10,000-square-foot, fifth-floor space in a prewar building just south of the theater district that offered the most potential for programming and design within a modest budget of $59 per square foot. "The clients sought a design that would spark day-to-day operations by emphasizing light, height, and quality of space, kept within affordable relocation and construction costs," Gomez says.

Besides its Broadway mainstays, EMG also designs media campaigns and materials for New York arts institutions such as City Opera and the American Museum of Natural History, as well as television industry players like PBS/Channel 13. Rather than go over the top with theatrical razzle-dazzle for the office, Gomez delivered the desired high-end visual appeal via inventive, cost-effective design solutions.

At the entry, the architect expanded the elevator lobby and created a view into the reception area with a frameless, acid-etched glass wall sandblasted with the company's logo. Beyond the glass wall, a com-

Project: *Eliran Murphy Group, New York City*
Architect: *Guillermo M. Gomez Architect—Guillermo M. Gomez, principal architect; Luciano Rennis, project designer*
Contractor: *Certified of New York*
Audiovisual consultant: *Ruppert Bohle*



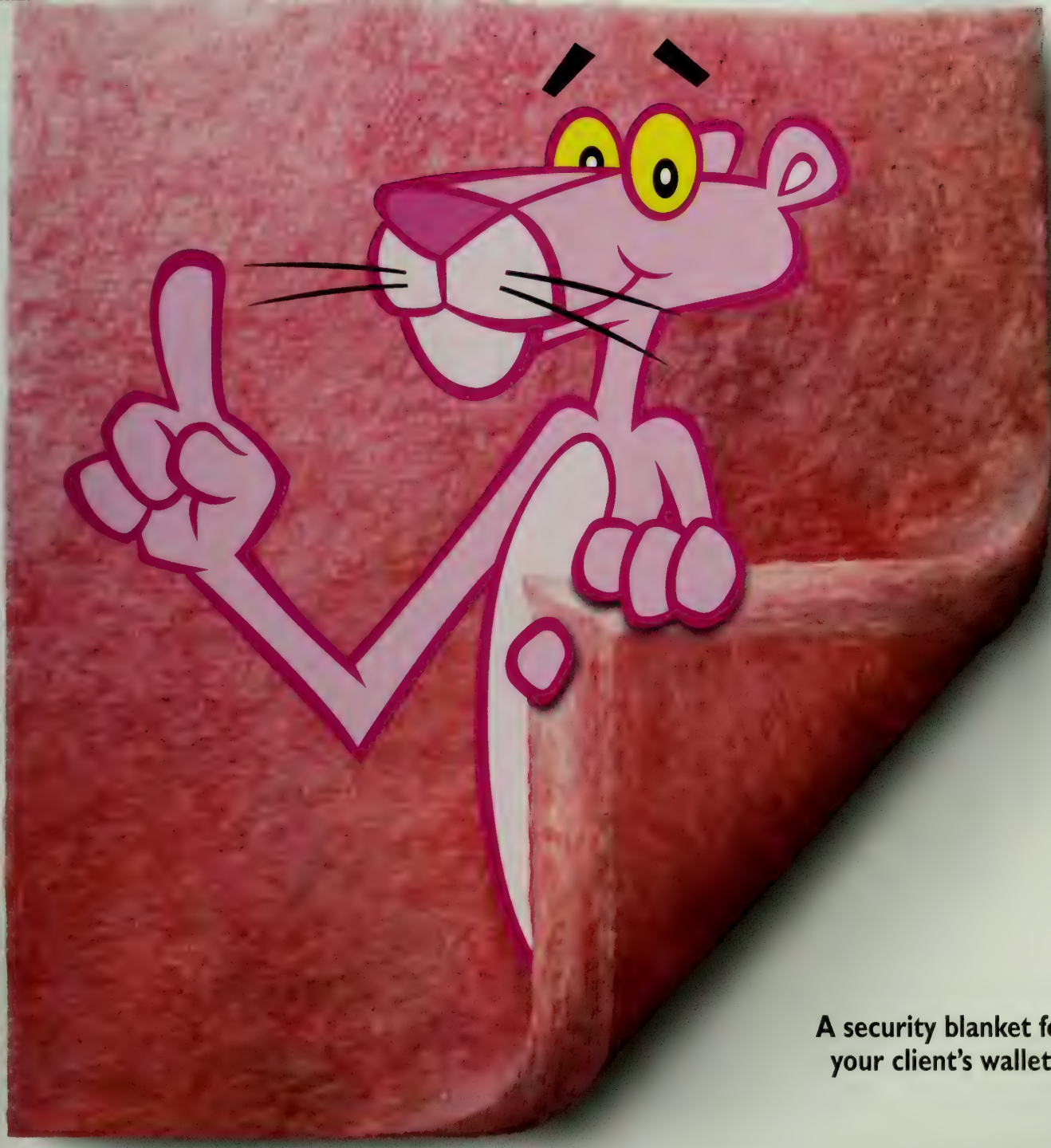




Private offices along the perimeter are enclosed by acid-etched glass walls and doors, which filter light through to the central core (above). Bands of clear glass offer employees better sight lines (right).

position of intersecting, Minimalist planes enclosing various zones creates a strong first impression. The same acid-etched glass tops a 6.5-foot-long reception desk set on the diagonal. Luminescent flooring with a pattern of repeating circles shifts from gray to green, silver, and gold, depending on the angle of light cast by ceiling-recessed light fixtures and the position of pedestrians. The agency's work, including television commercials for Tony-winning musicals, is projected against a side wall within view of reception seating, a cluster of Ron Arad's red Tom Vac chairs. "The clients originally planned to show their work on a flat-screen monitor, but we proposed a projector to make the images larger and more theatrical as a focal point for their clients and guests," Gomez explains.

In the main open-office area for creative teams, Gomez simplified the plan by demolishing an existing maze of enclosed offices, raising the ceiling, and opening the central core to accommodate 10 custom workstations. The partial enclosures are constructed of drywall painted in a Mondrian-inspired palette of red, yellow, and orange. Constructing desks, rather than purchasing a modular furniture system, allowed EMG to reuse undercounter filing cabinets and other support units, now painted black to recede from view. Partitions of translucent acrylic are mounted directly onto the drywall in random configurations so no two



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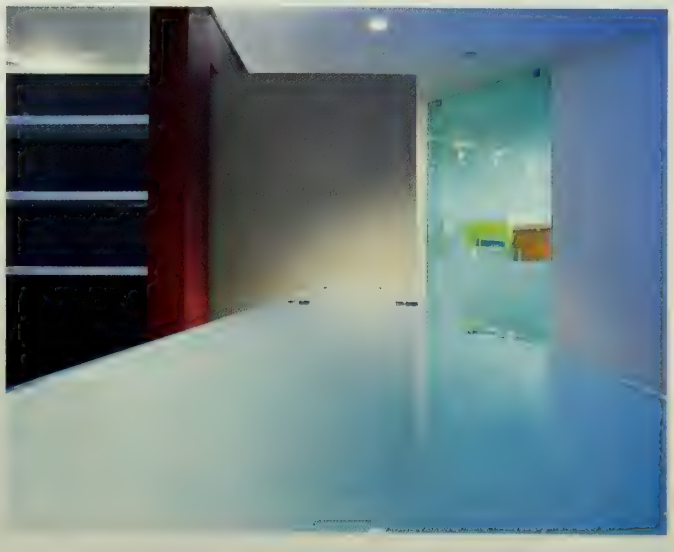


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Galvanized-steel pipes convey power cables to workstations (above left and right). Left unfinished and exposed, they join laminated-wood shelving cubes, white plastic laminate desktops, translucent acrylic panels, and colorful, painted partitions as an office kit of parts (above and below).



workstations are the same. Linear fluorescents inset atop some of the partitions enhance ambient uplighting. White laminate desktops and laminated plywood shelving are affordable, attractive contrasts to the color-splashed walls. Galvanized-steel pipes, which run power cables from the ceiling and walls to each desk, were left exposed to enhance the kit-of-parts look. The network of perpendicular colored walls also doubles as a gallery showcase for EMG's colorful posters and advertising artwork.

Private offices for art directors, account managers, and executives rim the perimeter, enclosed by acid-etched glass walls that allow daylight into the open-office core. A clear horizontal band runs through the translucent panels at the eye level of employees seated at their desks.

One client, the musical *The Thing About Men*, incorporated a projection of the EMG office into its production. "They wanted a visual image of a cutting-edge ad agency," Gomez says, "and said this fit the bill." It's a favorable review for GGA's design, an office for a key creative concern that improves the bottom line of show business. ■

Sources

Workstation laminates: *Formica Corporation*
Luminous panels: *Lumicore Acrylics*
Flooring: *Chilewich, through Architectural Flooring Research*
Ceilings: *U.S. Gypsum*
Door hardware: *Blumcraft*
Glazing: *Zecca Mirror & Glass*
Signage: *Certified Graphics*
Lighting: *Lightolier*
Reception chairs: *Vitra*
Cabinetry: *Certified of New York*
Paint: *Benjamin Moore*

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INSULATION MANUFACTURED STONE VENEER ROOFING SIDING



A custom-designed screen separates a breakout room and informal meeting area from the main corridor (above). The screen, which rotates and snaps into place with a gentle push, is made of unstained domestic walnut that frames woven paper rush (left).

Huntsman Architectural Group in San Francisco designs its office as a study in relaxed Modern style

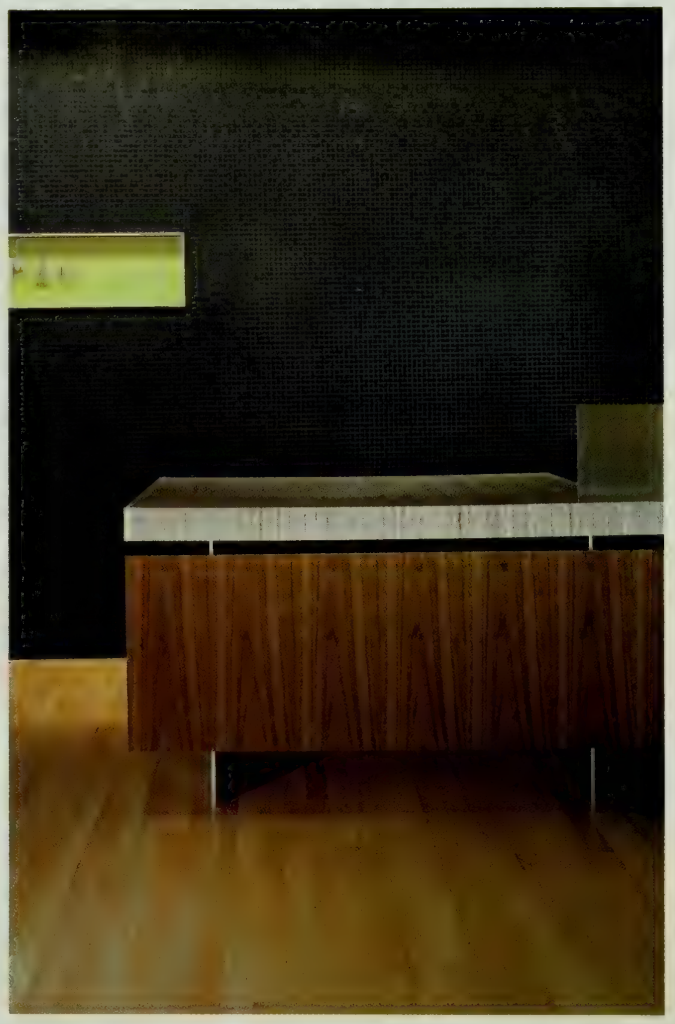
By Andrew Blum

The Barcelona chair designed by Mies van der Rohe is the mezuzah of American architecture firms, installed by the front door as a symbol of devotion to the tribe of Modernism. As a result, it has become a design-office cliché, a placeholder, a choice that is no choice at all. It is a pleasant surprise, then, to find it missing from the lobby of the new San Francisco quarters of Huntsman Architectural Group, replaced by a trio of Egg chairs, a lesser-known but still classic icon by midcentury Danish designer Arne Jacobsen. It is telling, too, because the robin's-egg-blue chairs also signal a devotion to high design, yet they convey warmth, comfort, and the atmosphere of hospitality that envelops each area of this clean-lined office.

"Clients will come in for a meeting, and they are often very comfortable just sitting in one of the reception-area Jacobsen chairs," notes Mark Harbick, AIA, Huntsman principal and lead designer for the office project. Clients may stretch out in public areas here, but not for want of other space. The 20,000-square-foot office on the seventh floor of a generic 1960s-era downtown building is designed to be accommodating not only to Huntsman's practice but to the local community. The firm typically hosts large holiday parties and other social functions, frequently lends its office to nonprofit organizations for benefits, and encourages clients (particularly those from out of town) to stop by, plug in a laptop, and help themselves to coffee in the kitchen. And nearly one third of the space accommodating the staff of 70 is skewed to "public" rooms that strike notes of openness and crisp informality.

The Huntsman practice moved to this location from offices scattered over several floors in a nearby historic building designed by architect Julia Morgan. Founded in 1981, when Daniel Huntsman left Gensler, the firm focuses primarily on designing architectural interiors in the San Francisco Bay area. After years of ad hoc growth, Huntsman saw this move as a chance to clean its own slate and start afresh. "It was time to design an office that better reflected our personality and expressed some of the cultural elements that make us different," Harbick says, sitting on a sofa in the living-roomlike lounge off the boardroom. Other project mandates were an inexpensive construction budget, experimentation with Modern forms, and the use of sustainable materials.

While the partners signed off on most decisions, key philo-



The walnut reception desk is topped by plywood turned on end and laminated. The charcoal mosaic is part of the graphic identity.

Andrew Blum is a freelance writer based in San Francisco. He is a regular contributor to ARCHITECTURAL RECORD *and* The New York Times.

Project: *Huntsman Architectural Group, San Francisco*
Architect: *Huntsman Architectural Group—Daniel Huntsman, principal in charge; Mark Harbick, AIA, design principal; Keith Turner, Aaron Vinson, project managers; Fritz Muegenburg, Alison Smith, James Reid, Nick Modroo, design team*
Consultants: *Randall Lamb/Capitol Electric (electrical); GFDS Engineers (structural); Charles M. Salter Associates (acoustical)*
Contractor: *Turner Construction*

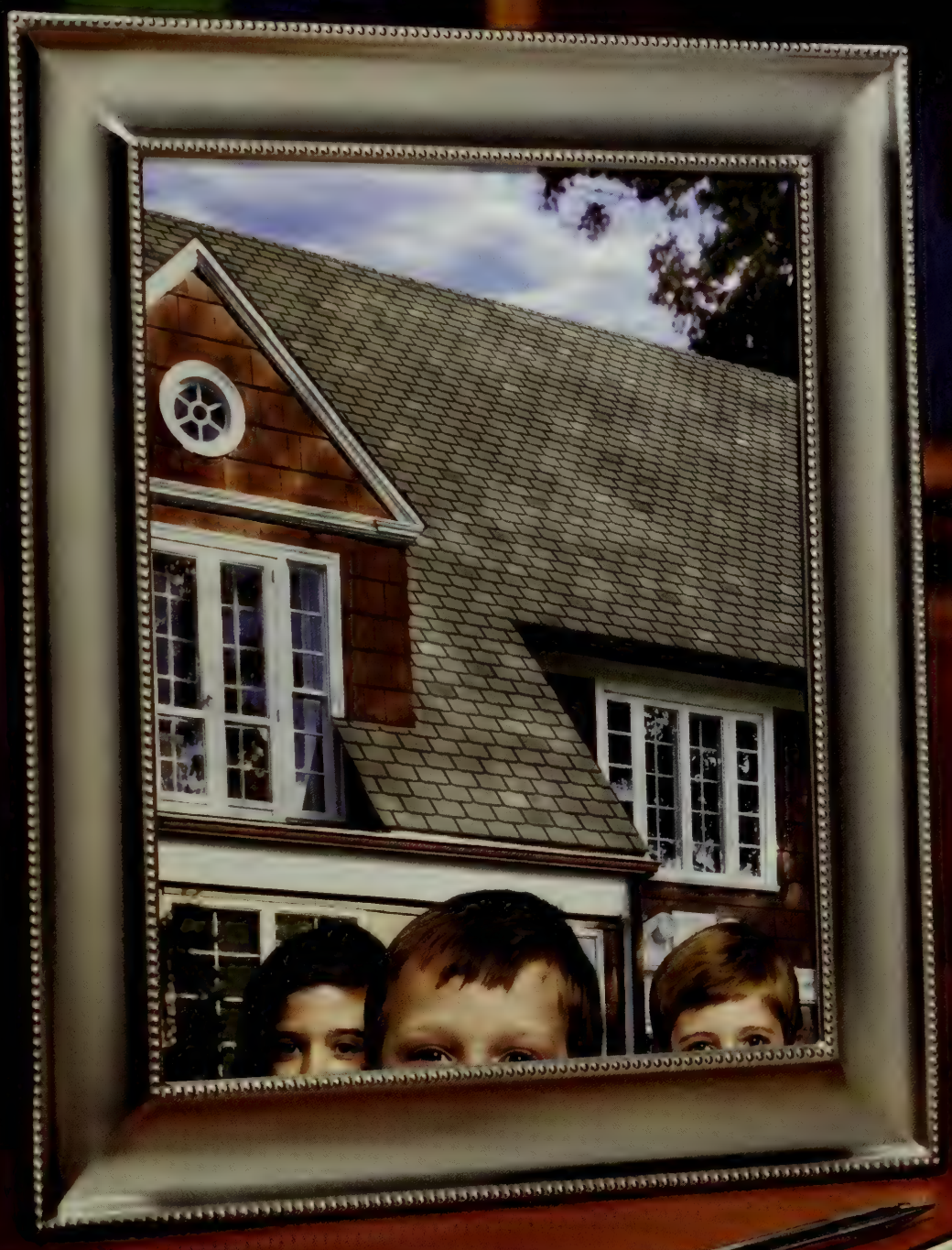
The long credenza in the conference room doubles as a buffet and extra seating (above). Jacobsen's Egg chairs impart a Modern yet casual feeling in the reception area (below).



sophical ideas were put to the firm as a whole in an attempt to democratically capture its corporate personality.

For example, the library in the old offices was beloved, but invariably a mess. "We got so busy and crowded," Harbick says, "when we ran out of conference rooms we would schlep our clients back into the library, and as soon as they got there their eyes got big—they just loved to see where it all happens." But would a library area work as the focal point of the new space? The issue was resolved at an "all-hands" meeting. The library now links the public rooms along the main circulation corridor with a single large studio in the back. Raising the 8-foot ceilings of the library to 12 feet balanced the size of the room and illustrated for clients Huntsman's philosophy of using its office as a combination lab and showroom. (Similarly, the dropped ceiling in the studio has a 6-inch gap to demonstrate the "inner workings" of the infrastructure above.) The proximity of the library to the boardroom means clients can sometimes be found riffling through sample catalogs on their own. The room's flexible tables also make it the area most frequently used by outside groups—most recently, Pets Are Wonderful Support (PAWS), a San Francisco

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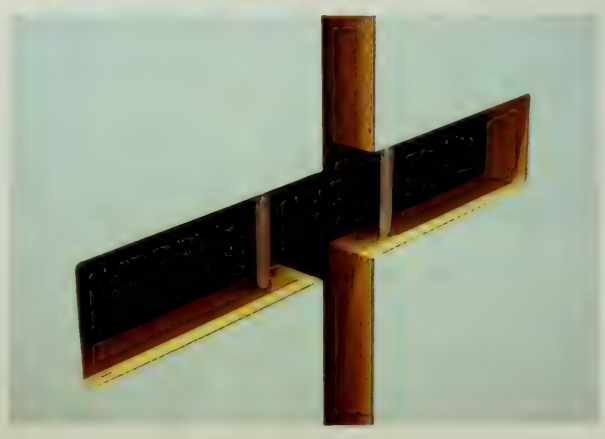


charity that helps people with HIV/AIDS care for their pets.

Huntsman has engaged its office as a "beta testing" site for mock-ups of new furniture and interior products manufactured by companies that include Herman Miller and Peerless Lighting. (The mesh backs of Eames swivel chairs were "road tested" in the conference room.) Serving as a marketing tool and calling card, the office has aided the firm in acquiring new clients, some of whom first became aware of Huntsman while touring the office to see its on-site installations at the invitation of manufacturer representatives, Harbick reports.

One room that captures the form-and-function spirit of the office is the open kitchen, where clients help themselves to coffee, and snacks and wine are served on Friday afternoons. An island is topped by plywood turned on its side and laminated, while the counter is covered in linoleum—inexpensive, strong, and sustainable. When the manufacturer of the latter material refused to warrant it for use on any surface but the floor, Harbick decided to experiment with it anyway. Becoming your own client, he notes, can lead to a windfall of new design solutions. ■





Huntsman employees applied colored fabric randomly to open-plan office panels for a sense of informality (above). A credenza's sliding wood top covers recycling bins (left). Cutouts in doors along a corridor create sleek handles without heavy hardware (below).

Sources

Wood flooring: *Junkers*
Carpeting: *Prince Street; Interface*
Mosaic wall tile: *Bisazza*
Ceilings: *Armstrong*
Wall panel system: *Fabrictrak*
Lighting: *Peerless Lighting; ERCO; RSA; Bella Shades; Selux; Artemide*
Furniture: *Knoll; Herman Miller; Sloan Miyasato; Vecta; Steelcase; Cassina; Nienkamper; Mayline; Design Within Reach*
Fabrics: *Carnegie; Designtex; Maharam; Jack Lenor Larsen; Pollack*

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AIA Chicago 2004 Booth #11

Traboscia Roiatti introduces a modern point of view to the offices of French vintner Clicquot in New York City

By William Weathersby, Jr.

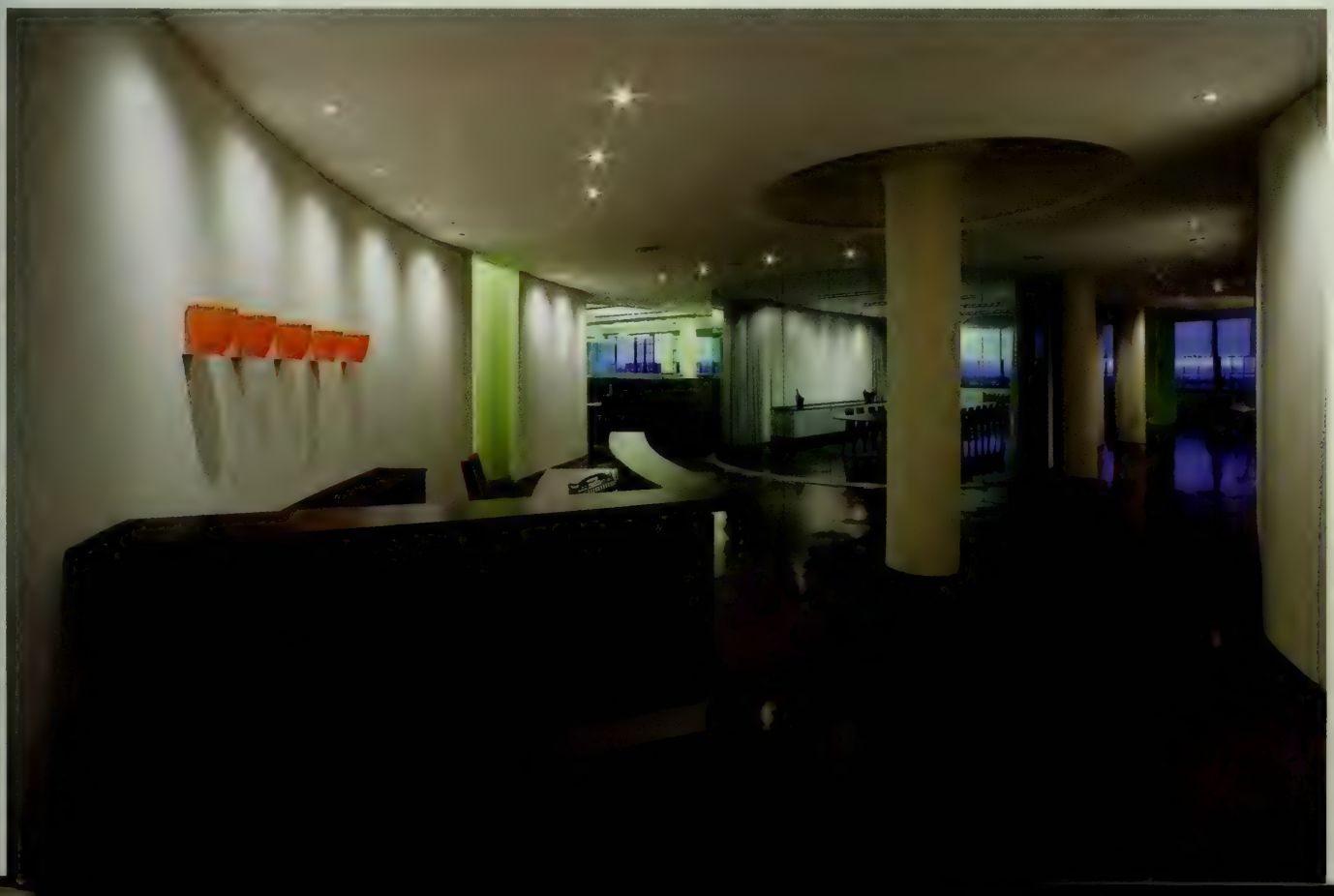
Veuve Clicquot, which translated from the French means "Widow Clicquot," is the premium champagne and parent company named after the extraordinary woman who was a trailblazing entrepreneur in 19th-century France. Widowed at age 28 in 1805, Madame Clicquot took the reigns of her family business and over six decades built a premium brand, exporting champagne to Russia and America, among other precedent-setting destinations. Today, the international bottler and distributor has an expanded portfolio reaching beyond France's Champagne district to include wines from the Marlborough region of New Zealand and vineyards in the Pacific Northwest.

Clicquot, Inc., the U.S. subsidiary, is helmed by president and C.E.O. Mireille Guiliano, a woman on whom the tenacious legacy of Madame Clicquot is not lost. When scouting for space to house a new headquarters in Manhattan, Guiliano says she sought a location and interior style that were less traditional than the company's previous Midtown offices and more in line with its current spirit of modernity and global trade. "In the 1980s and '90s, the conventional place for a luxury company to be was on Fifth Avenue," Guiliano says. "It was time for us to move on from our location there, and we wanted to be where the action is."

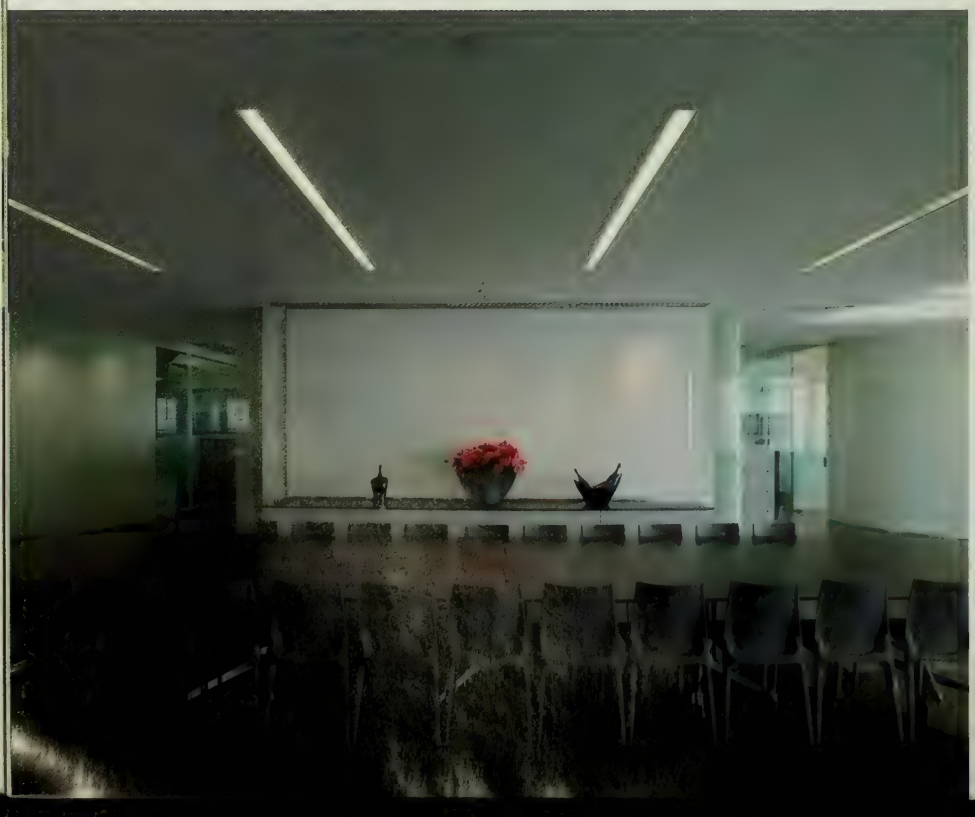


The curving forms and orange accents at Clicquot, Inc. (below) were inspired by the vintner's champagne bottles (right).

Working with architects Traboscia Roiatti, Clicquot secured a 13,500-square-foot space in the Chelsea neighborhood's Starrett Lehigh Building, an address that could not be more au courant. Converted several years ago for office use, the circa 1931 former railroad depot houses high-end fashion and lifestyle tenants, including Assouline, Hugo Boss, and Martha Stewart Omnimedia, plus a roster of commercial art galleries and photo studios. Clicquot also uses its office as a venue for entertaining clients, so the location's dealmaking attraction was an adjoining 4,000-square-foot terrace with two exposures framing views of the Hudson River, the Statue of Liberty, and Midtown landmarks such as the Empire State Building.











Though their colleagues in France typically work in pastoral châteaux or city town houses lined with rich wood paneling and antique furnishings, Clicquot's New York executives envisioned an office that was "contemporary, open, and light," says principal architect Robert Traboscia. The 15th-floor facility was graced with broad expanses of landmarked, factory-style windows, but presented challenges in terms of layout and programming, he notes. To reach Clicquot's corner area beyond other tenant locations, for example, a new public corridor was required to connect to one corner of the company's rectangular space. Because enclosed executive offices would adjoin the terrace at the end of the office opposite the entrance, circulation between public and private

TRADITIONAL INTERIORS WERE REPLACED BY A LOFT WITH OPEN SIGHT LINES AND PANORAMIC VIEWS OF MANHATTAN.

zones was a grappling point for the design team.

A kitchen, bar, café, and wine-storage area were set requirements. "Flexible, accessible facilities to accommodate special events such as wine tastings were a key part of the program," adds project partner Caterina Roiatti, AIA. In terms of circulation, "no one wanted guests to wade through open office areas to reach the terraces during a party. The floor plan had to balance the demands of entertainment areas on one hand and private office, support staff, and production areas on the other."

The conference room (opposite, bottom left and top) juts into the bar and café area. The C.E.O.'s private office (above) and another executive's office (opposite, bottom right) are faced with glass walls and doors treated with translucent film.

To maintain internal sight lines while maximizing daylight and framing the panoramic views, a series of glass-framed enclosures were set within the boxy building envelope. The architects say they were inspired by the classic Veuve Clicquot champagne bottle itself. The shapely container influenced curving glass walls "with a liquid, transparent feeling, which transmit daylight to the core while encouraging a flow of movement," Roiatti says. Meanwhile, the bottle's distinctive orange label (called "Clicquot yellow" by employees) was adapted as an accent color.

The office design capitalizes on volume and light to trump the space's vast horizontality. Visitors are greeted at the Clicquot reception area by long views looking diagonally through the glass-enclosed conference room and work spaces beyond; one can see skyscrapers from the outset. Set between the concave front edge of the reception desk and the perimeter of glass doors and windows facing the terrace, the private meeting room becomes a central focal point, with the "fork in the road" it creates in plan presenting two main circulation choices. The floor-to-ceiling glazing of the conference room enclosure is faceted to echo the lines of the Starrett Lehigh Building's perimeter wall. Though its meeting-in-a-fishbowl configuration puts participants on view at center stage, the room is fitted with blackout draperies that can be deployed for privacy.



The beveled line of the the building's glazing is reiterated by the outline of the nearby bar (below). The existing concrete floors were stained in a sepialike shade that approximates the color of vintage Veuve Clicquot wine labels and bottle glass. A café area beyond the conference room is set near windows overlooking the 4,000-square-foot terrace, newly outfitted with pavers (right).



Enclosing executive and management offices, floor-to-ceiling glass walls configured without visible framing seem to dissolve the mass of interior spaces. Treated with bands of translucent film, the enclosures afford a degree of privacy while conveying openness. Ceiling tiles and tackable surfaces manufactured from recycled materials also convey a progressive culture. To also meet the mandate of low-cost, durable materials, an orange laminate bar and tabletops, in addition to orange paint accents, approximate the signature Clicquot hue without requiring custom color-matching. Bright, lightweight chairs and bar stools are a perfect spot for guests to perch while toasting the sunset over the skyline. ■

Project: *Clicquot, Inc., New York City*
Architect: *Traboscia Roiatti—Robert Traboscia, Caterina Roiatti, AIA, partners in charge; Diego Otero, Michael Silverman, Andres Tenorio, project team*
Consultants: *Liker Associates (engineer); Jim Willey/International Lights (lighting)*
General contractor: *Celtic General Contractors*

Sources
Furniture panels: *Trespa USA*
Acoustical panels: *Tectum; P.E.P.P.*
Chairs: *Heller; Vitra*
Shelving: *Rakks*
Lighting: *Atlite; Lucifer Lighting; Selux; Hess America*

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A layering of steel, glass, and felt panels and screens defines the entry to Grip. Halogens and fluorescents create sparkle.

Transparency, lightness, and a sense of play enliven two Toronto offices designed by architect **Johnson Chou**

By John E. Czarnecki, Assoc. AIA

Toronto is home to a number of young multimedia design firms whose offices near downtown are often nondescript, with exposed brick walls in renovated warehouse buildings. While the firms may be creative, they can become bland landscapes of standard, open-plan workstations. Taking a different tack, two firms, Grip Limited and Medium One Productions, turned to Toronto architect Johnson Chou to design spaces that better reflect their companies' distinctive, sophisticated styles. Chou, who says he was inspired by the notion that a workplace can help engage both a firm and its client to achieve a creative vision, developed two offices that enhance the industriousness of each company without overemphasizing the industrial nature of the core facilities it occupies.

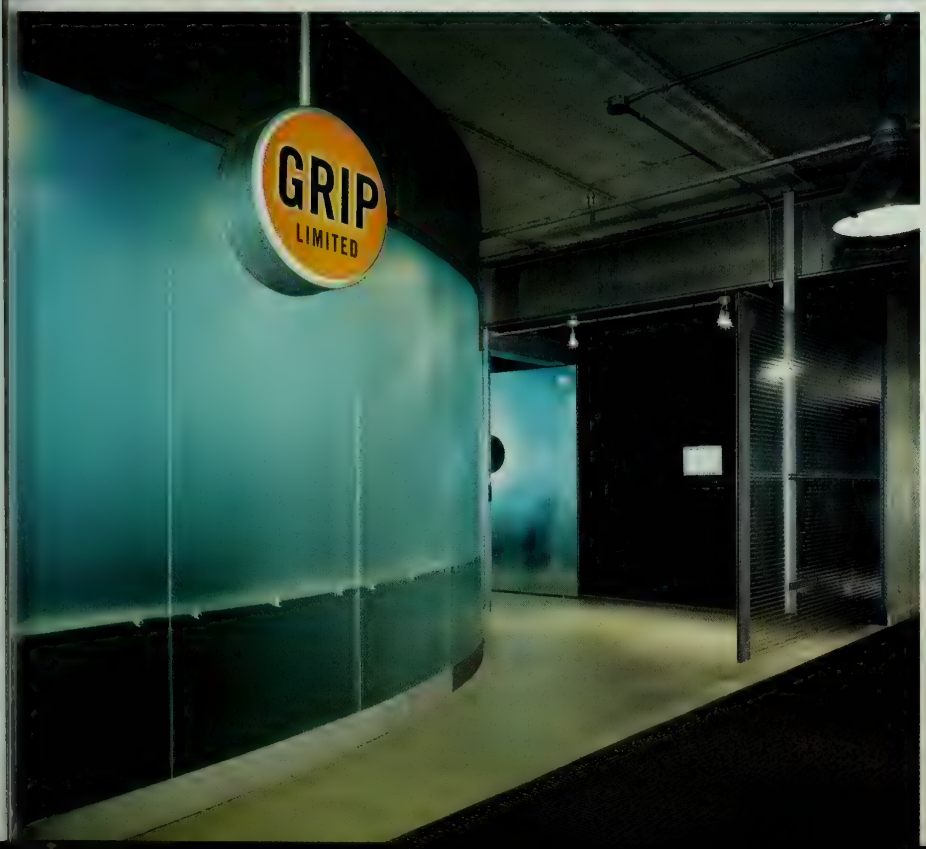
John E. Czarnecki, Assoc. AIA, is an acquisitions editor of architectural books at John Wiley & Sons and a former associate editor of ARCHITECTURAL RECORD.

Since 1999, Chou has built his practice with projects mostly in Toronto that encompass the design of offices, restaurants, and furniture. Like many of his commissions, Grip and Medium One display his inventive use of materials and exploration of transparency and illumination.

Grip, a creative agency focusing on multimedia print and film design, granted Chou broad design freedom, he says. Perhaps best known in Canada for its irreverent TV ads for Labatt Breweries geared to young men, Grip wanted an office that was neither corporate nor overtly funky, and that reflected a sophisticated rather than sophomoric wit. To find this middle ground, the architect was inspired by Grip's trademark advertising tableaux, in which a spare number of actors and objects are animated in unexpected ways; he kept that idea in mind as he designed the space.

Located on the third floor of a new mixed-use building on Toronto's youth-oriented Queen Street West, Grip's office employs a minimal palette of materials, textures, and a single color—orange—to

Aside from the orange carpet in the lounge (above), floors are a gypsum-based commercial underlay, while ceilings expose the building's concrete structure (below left). A circular conference room is enclosed by nylon stretched across a steel frame (below).







Exploring the power of materiality and translucency at Medium One, Chou designed a long steel reception desk fronting a glass ramp (below) and steel workstations topped by illuminated acrylic panels (right).





great effect. From the elevator, the sweeping curve of an acrylic wall, which encloses a conference room, leads past the orange Grip logo to the main entrance. A wall, covered in gray felt to dampen sound and add texture, defines the path to workspaces while separating public and private realms.

Programmatically, Chou layered sequences of forms and enclosures within the 6,700-square-foot envelope. The tableaux include a suspended, spherical meeting pod enveloped in nylon fabric stretched on a steel frame. A glass-enclosed lounge features orange carpet (besides the signage, the only bright color present) and sofas Chou designed that attract employees taking breaks during and after late-night work sessions. The lounge is also soundproofed for blaring stereos and televisions.

AT TWO TORONTO MEDIA FIRMS, GRIP AND MEDIUM ONE, GLASS PANELS AND LUMINOUS SURFACES CONVEY OPENNESS.

Private offices for Grip managers hug the south wall, with cubicles reserved for account managers. In creative team areas, workstations can be divided for privacy via sliding, galvanized-steel doors. Clear and translucent glass panels throughout convey openness and informality.

A few blocks west of Grip, Medium One is set within a former munitions factory with original wood and rough concrete floors, heavy timber framing, and remarkably beautiful brick walls. Chou's simple Modern office installation contrasts with the sublime yet aging existing conditions. At the entrance, a stainless-steel reception desk spans the length of a frosted-glass ramp that leads to the creative staff wing. Custom workstations feature steel bases and acrylic enclosures that pivot to open and close. When lit, the workstations appear more like an art installation than standard desks; Chou confirms that he was inspired by the illuminated artworks of James Turrell when tackling this office configuration.

At Grip and Medium One, Chou explores translucency, materiality, and complexity of form. Though each is distinctive, both of the offices express the playful yet professional nature of the creative work at hand. ■

Project: *Grip Limited, Toronto*
Architect: *Johnson Chou—Johnson Chou, Anne-Rachel Schiffman, Steffanie Adams, David Annand Peterson, Seth Matson, Stacie Amo, Parisa Manoucheri, project team*
Engineer: *Nunn Warden Design*
General contractor: *MCM 2001*

Sources
Glazing: *CLO Glass; CYRO*
Furniture: *Keilhauer; Nienkamper*

Project: *Medium One, Toronto*
Architect: *Johnson Chou—Johnson Chou, Michael Lam, Steve Cho, project team*
General contractor: *Pro-Co*

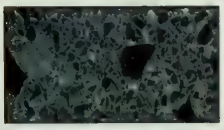
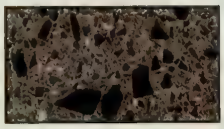
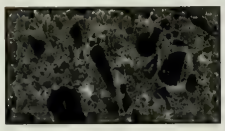
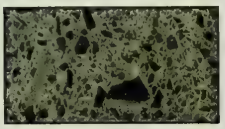
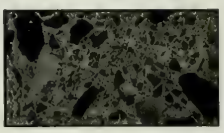
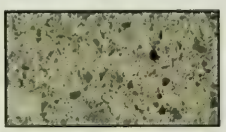
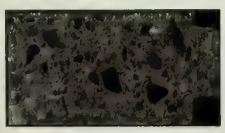
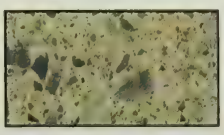
Sources
Glazing: *CLO Glass*
Lighting: *Eurolight*

For more information on this project, go to Projects at **www.architecturalrecord.com**.


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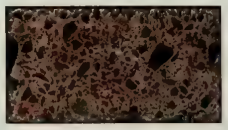
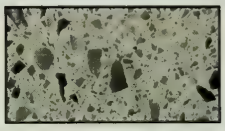
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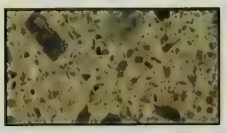
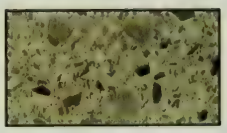
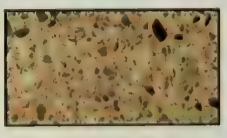
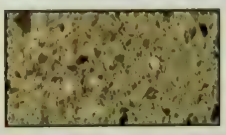
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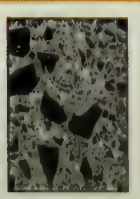
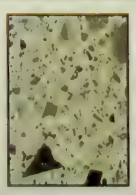






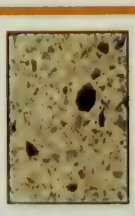
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At the Milan Furniture Fair, **Frank Gehry** translates his signature shapes into chairs and door hardware





With major new works such as the Stata Center at MIT, a music pavilion and bridge at Millennium Park in Chicago, and two recent civic building commissions in Brooklyn, Frank O. Gehry remains dead center on the radar of architects working at full-tilt. (His new bottle for the Polish vodka brand Wyborowa won over another strain of aficionados in May.) At the Milan Furniture Fair in April, Gehry switched gears to blaze a trail within the world of interior furnishings and fixtures. His furniture designs for American manufacturers Emeco and Heller joined shapely hardware for the Italian company Fusital/Valli&Valli to blanket the show's Pavilion 20 in FOG. Though shown as prototypes with some tweaking to come, the chairs, tables, and door handles captured the architect's signature melding of industrial motifs (gray or natural finishes), materials (aluminum, resin, stainless steel), and playful shapes (door handles evoked fish and arrowheads), while Heller's line seemed like abstractions of his building models. Among the highlights:

The stacking Superlight chair has an optional felt pad supported by an aluminum base. Emeco, Hanover, Penn. www.emeco.net **CIRCLE 251**

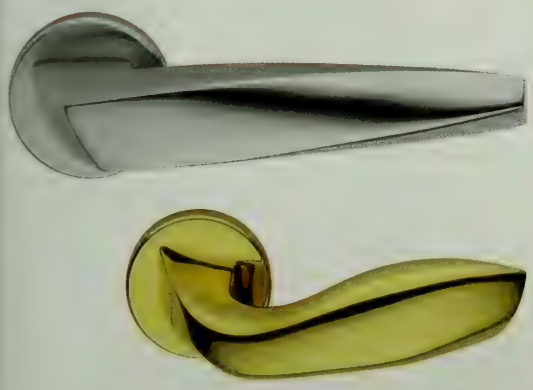
For use indoors or out, a series of cubes, tables, and a sofa come in silver resin. Heller, New York City. www.helleronline.com **CIRCLE 252**

The FOG Duemilaquattro (abstract fish shapes) and Arrowhead series include door and window handles, knobs, and coat hooks in finishes such as polished brass and satin stainless steel. Fusital/Valli&Valli, Renate, Italy. www.vallievalli.com **CIRCLE 253** *William Weathersby, Jr.*

For more on these designs, plus Gehry discussing his work with Emeco, go to **www.architecturalrecord.com**.









Clockwise, from top left: Gehry perched on his cube for Heller; his sketch for the Superlight folding chair by Emeco; two views of the Superlight chair in brushed/anodized aluminum; the Frank Gehry Furniture Collection by Heller; maquettes of the Heller line; and Fusital/Valli&Valli's door handles in stainless steel (top) and polished brass (bottom).



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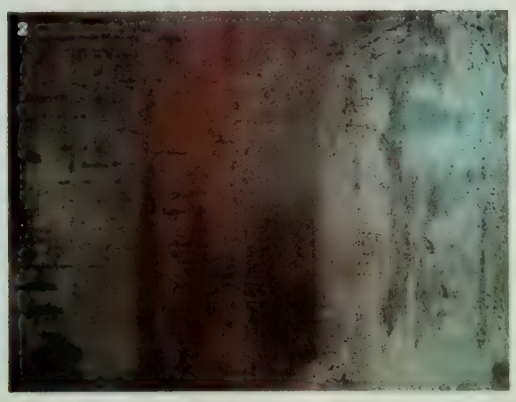
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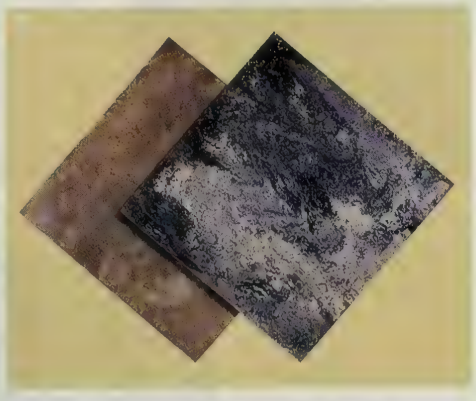


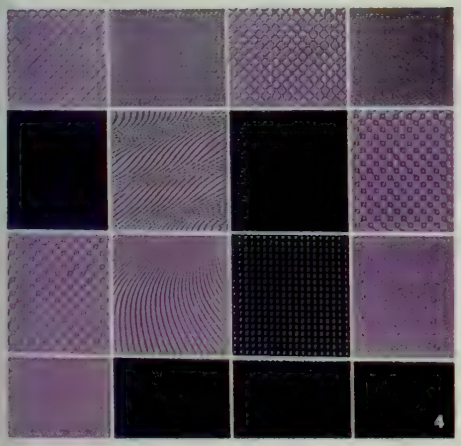
Natural-Look Spanish Tile a Hit at Cevisima

The look of natural stone, weathered oxidized steel, and even simulated wood grain were big trends among the Spanish ceramic tile showcased at the annual Cevisima trade forum in Valencia, Spain, last March. More than 1,500 exhibitors attracted over 86,000 visitors from 140 countries to view a wide array of tile for commercial and residential use. Another highlight was a broader range of tile dimensions, with many companies offering six or more sizes in square or rectangular formats with additional coordinating, mesh-mounted mosaics and bar- or rod-shaped accent pieces. Bright colors, including red, inspired by Pop Art and Art Deco, made a strong return to the market. For more information on these products, Spain's tile industry, or individual manufacturers, visit the Miami-based Tile of Spain Center at www.spaintiles.info. William Weathersby, Jr.

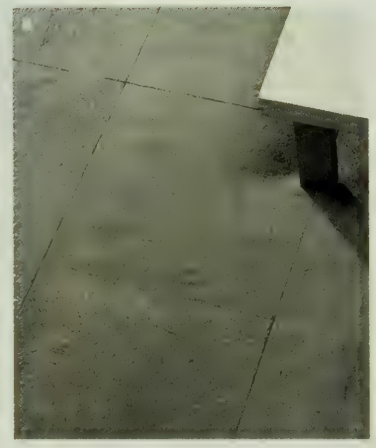












1. Uchi from Saloni is inspired by the texture of Japanese rice paper. This ceramic tile series encompasses coordinating wall and floor tiles. The wall tile is produced in a 12" x 24" format, while the floor tile comes in 12" squares. Uchi offers light tones of ivory, cream, and gray. The series is complemented by a woven-rattan relief tile named Tatami, offered in 12" x 12" and 3" x 12" formats. Saloni, San Juan de Moro, Spain. www.saloni.com **CIRCLE 206**

2. Corten by Tau Ceramic replicates the naturally oxidized steel widely used in contemporary architecture and sculpture. This porcelain tile series is offered in 12" x 24" and 24" x 24" formats. It is available in an oxidized dark blue iron finish (Corten B) and a rusty bronze color (Corten A). Tau Ceramic, Castellon. www.tauceramic.com **CIRCLE 207**

3. Alcalagres specializes in the production of commercially rated porcelain tile. Its Islas Series of double-loading porcelain tile is offered in 16" x 16" and 13" x 24" formats and comes in abstract, nature-inspired hues, including blue, yellow, and green. Options are a polished or smooth matte-satin finish, with coordinating pieces. Alcalagres, Madrid. www.alcalagres.com **CIRCLE 208**

4. Inalco's Structures, a series of 8" x 8" wall tiles, is produced in 12 colors, including white, gray, and various shades of green, lilac, and blue. This series features 10 design reliefs that can be mixed for added visual impact or used individually for a more subtle installation. Inalco, Alcora. www.inalco.es **CIRCLE 209**

5. Altamira is part of Porcelanosa's Ston-Ker collection of all-through body porcelain tile. Ston-Ker is an extensive program of stonelike tiles with a high slip-resistant surface featuring a smooth, nongritty texture. This feature improves safety with the added value of easy cleaning. Altamira is produced in 17" x 17½", 17" x 26", and 6" x 26" formats, and comes in gray, beige, and brown. Porcelanosa, Villarreal. www.porcelanosa.com **CIRCLE 210**

6. Keraben's Futura is a commercially rated, all-through body porcelain tile series, engineered for floors and available in a polished, high-gloss finish, a semipolished satin texture, or with a natural matte surface. The tiles are offered in black, white, cream, gray, and mocha. Futura is produced in 16" x 16" and 12" x 24" formats. Keraben, Nules. www.keraben.com **CIRCLE 211**

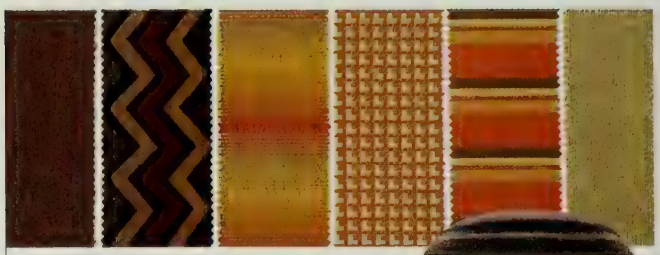
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Interiors Products Contract Fabrics



◄ Cushionlike back fabric

Herman Miller now offers an upholstered-back option to its Mirra office chair. Mirra's new upholstery fabric, Latitude, is placed on the front of the backrest with a trim piece around the periphery. Latitude's spacer-knit technology provides a cushionlike material for the user to sink into without the use of foam. The fabric comes in 17 colors and is made from polyester that is 100 percent recyclable at the end of its useful life. Herman Miller, Zeeland, Mich. www.hermanmiller.com **CIRCLE 200**





▲ Crafty collaboration

Winkraft is a new brand of contemporary textiles, furniture, and accessories launched by the Winkreative design agency and Bernhardt Design. The first offering from Winkraft is the Alp Maritim collection of upholstery fabrics. Created in collaboration with Swiss textile designer Caroline Flueler, the six designs feature colorways that blend a selection of neutrals with splashes of bright oranges, greens, and blues. Bernhardt Design, Lenoir, N.C. www.bernhardtdesign.com **CIRCLE 201**

► Ancient look for modern fabrics



The Ceramica collection of Crypton jacquard upholstery textiles was inspired by age-old craft techniques, including raku, terrazzo, and fresco. Crypton, the patented textile-treatment process, is engineered to provide extreme stain, moisture, and microbial resistance. The fabrics are intended for projects including health-care, corporate, and hospitality facilities, as well as the residential market. Pallas Textiles, Green Bay, Wis. www.pallastextiles.com **CIRCLE 202**



◄ Fabrics from the brink

The Brinkman Fabric Collection is now available in the U.S. solely through Roger Arlington's national showrooms. Previously, these fabrics were only available to an exclusive group of Anne Paul Brinkman's own clients. Brinkman, a Dutch designer/artist/architect/antique dealer, created a collection of jacquard woven fabrics in silk, linen, cotton, and mohair, in response to a need for adequate fabrics for his interior projects. Shown here is Allover, a cotton/linen/silk blend. Roger Arlington, New York City. www.apbrinkman.nl **CIRCLE 203**

▼ Working out a better fabric

Burlington Contract Fabrics' (BCF) new Environ fabric (right) is engineered from postindustrial textile chip and is suited for applications where polyester products are currently used for panel and upholstery. One of the newest products from BCF featuring Environ technology is ProKnit (left), a knitted, layered panel fabric and upholstery based on a technology once confined to the performance apparel industry. Burlington Contract Fabrics, Greensboro, N.C. www.burlingtoncontractfabrics.com **CIRCLE 204**





► Vintage textiles



The name for Keilhauer's new Recho Collection of five textiles came from the desire to address different segments of the market—residential, contract, and hospitality—with a collection of sophisticated fabrics inspired by the couture fashions of the 1950s. The collection includes Divine, a wool blend that features a refined faille weave inspired by elegant French coating fabrics; Coco, an embodiment of the texture found in suits from the house of Coco Chanel; Faux, a faux suede that is durable enough for contract settings; and Aria, a semianiline-dyed cowhide. Keilhauer, Toronto, Canada. www.keilhauer.com **CIRCLE 205**

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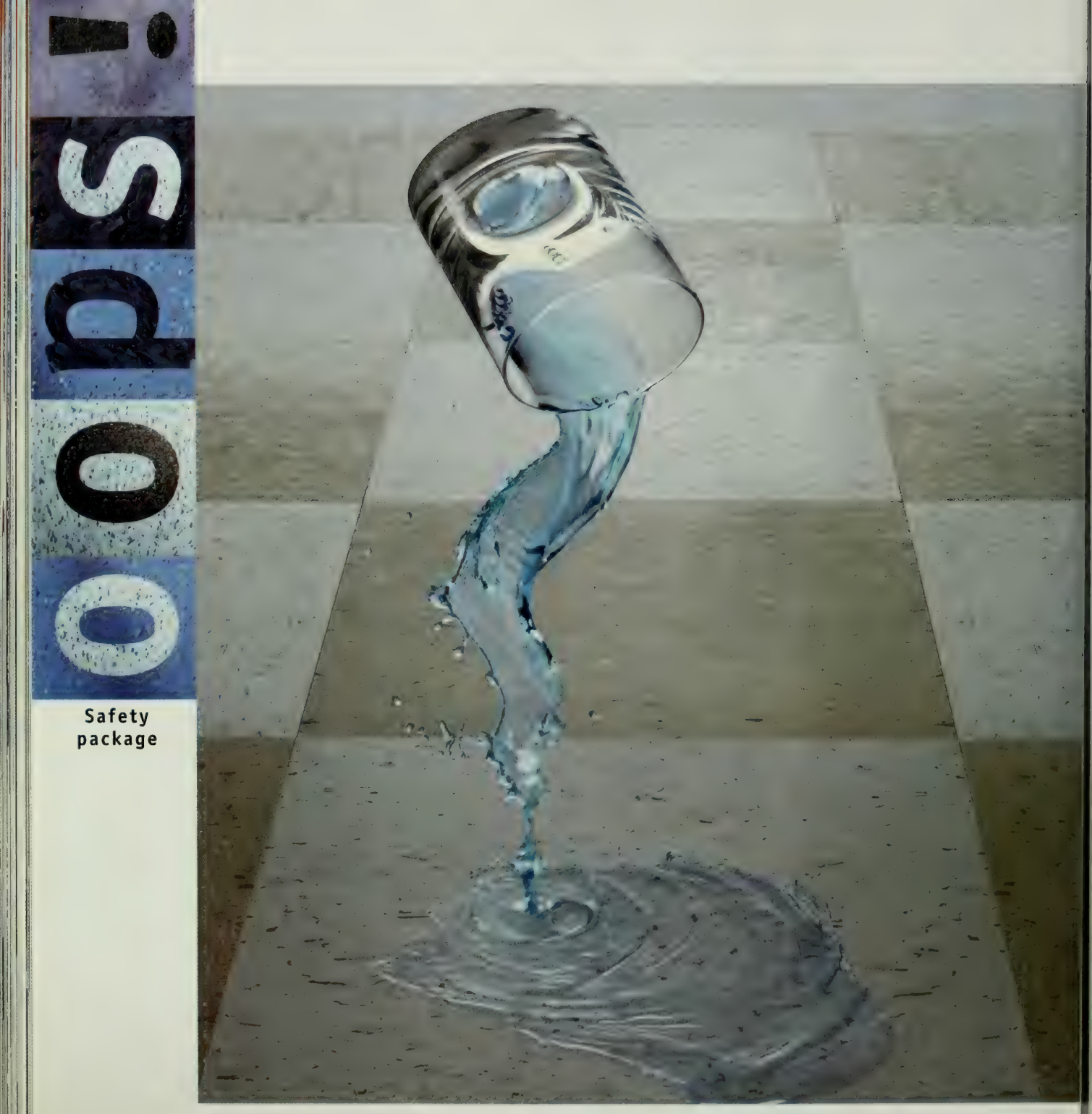
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Commercial Carpet & Furnishings

The following **carpet & furnishings** are appropriate for an array of commercial interiors, particularly the office setting. It is now standard for furnishings such as chairs to have an ergonomic "brain," and carpets to have an environmental "conscience," reflecting a **trend toward a healthier work environment.** *Rita F. Catinella*

Practical solutions for when meetings and furniture intersect

According to Herman Miller, while a higher proportion of workplace square footage is being allocated to multipurpose group spaces, collaborative efforts can be impeded by work tools and environments designed mainly to support individual tasks. Herman Miller has responded to this issue with the Intersect portfolio, an offering of flexible, freestanding products designed to be used in open areas. Although primarily intended for settings that support up to six people, Intersect's elements are scalable to accommodate groups of any size.

Intersect is divided into four categories: display products that allow note taking as well as the display of ideas and information; tables in different sizes and shapes; stacking and lounge seating; and boundary products, including four- to six-panel telescoping screens to divide space, create standing privacy, and add vertical work space.

Rather than focus on a single design vision, Herman Miller chose to work with an array of designers. Mark Goetz's Idea Exchange Center is a large marker board/display surface that also delineates group space. Jeff Weber contributed the Foldaway mobile table, the Caper chair (an existing product), and the Mobile Easel. Kyle Swen and Danny Peter's Work Island serves as a mobile café or a standing meeting space for two to six people. Ayako Takase and Cutter Hutton's Kotatsu worktable features a functional understructure and a clever center-cutout tray, and when workers need to take a load off, David Pesso's Celeste Lounge Seating offers a soft seating solution. Herman Miller, Zeeland, Mich. www.hermanmiller.com **CIRCLE 212**





The Work Island (above) can serve as a mobile café; detail of the Kotatsu worktable's shelf (top); Mobile Easel features two locking casters (right).



Colorful lacquered executive furnishings

The fruit of one of the Fantoni Research Center's experimental projects, the Stripes collection of executive office furniture was recognized with an award at this year's Salone del Mobile's office exhibition, Eimu 2004. Developed in cooperation with Marco Viola, Stripes uses a sequence of colored bands in three color schemes, including shades of green (left), multicolor (right), and shades of gray. The system is composed of a bookcase, a desk, and a bench in two width/height combinations. Each element is manually lacquered with high-resistant paint on MDF panels. Luminaire, Miami, Fla. www.fantoni.it **CIRCLE 213**

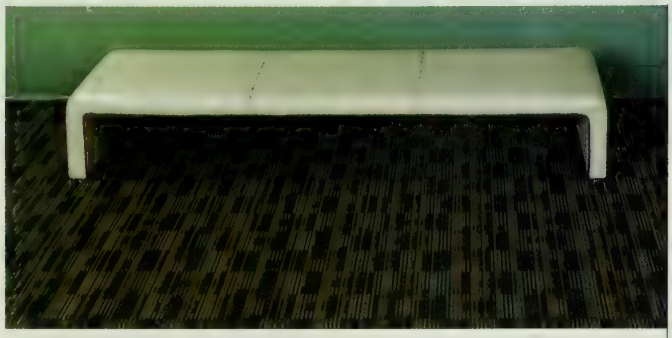
New standard for sustainable carpet tile

C&A Floorcoverings has introduced the Cycle Collection: two coordinating, nondirectional designs of different scales intended for corporate and government settings. Sequence is the first of the two designs to be released, followed by the blocks-on-blocks design of Cadence. The environmentally friendly carpet tile will utilize Honeywell's (formerly BASF) Savant HRC (High Recycled Content) nylon with a minimum of 50 percent recycled content (25 percent postconsumer and 25 percent postindustrial). In addition, a built-in RS tackifier eliminates the use of wet adhesives, which can contribute to poor indoor air quality. Independent, third-party certification through Scientific Certification Systems has verified the total recycled content of the product as well as its 100 percent recyclability. C&A Floorcoverings, Dalton, Ga. www.tandus.com **CIRCLE 214**



Products

Commercial Carpet & Furnishings



▲ Something to admire while waiting in line

Shaw Tek introduces In Line, a collection of complementary carpet styles designed for the higher education, health-care, and government markets. Comprised of six products in nine colorways and varying scales, In Line was created using advanced tufting technology and random color thread-up capabilities. It is constructed of EcoSolution Q fiber, among the first products in the world to be fully assessed through the Cradle-to-Cradle Design Protocol. Shaw Industries, Dalton, Ga. www.shawinc.com **CIRCLE 215**

► Coordinating carpets

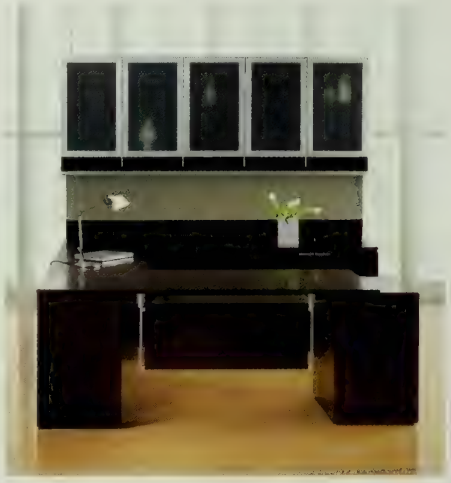
PacifiCrest Carpets has expanded its portfolio of midpriced, high-performance carpet for the commercial market with the introduction of two coordinating patterns, Aspect (shown) and Perspective. Complementary, large-scale patterns, the designs unfold in gentle waves and come in a 24-choice color palette. Aspect is precision-tufted in a patterned loop format, while the tip-sheared finish of Perspective creates a softer, distinctive color effect. PacifiCrest Carpets, Irvine, Calif. www.pacificrest.com **CIRCLE 217**



► Sit and think

Steelcase's new midpriced office chair, Think, is designed with a three-part "brain"; flexors that adapt to the user's movements; a reclining mechanism that creates resistance proportional to the user's individual weight; and an adjustable back selector. The company worked with McDonough Braunguart Design Chemistry to give the chair a "conscience," as well. Comprised of 98 percent recyclable content and up to 50 percent recycled material, Think is the greenest office chair on the market to date. Steelcase, Grand Rapids, Mich. www.steelcase.com **CIRCLE 216**





▲ Two ways of working with it

Winner of the "Best of Competition" award at NeoCon 2002, Nucraft has enhanced its Origin product line by creating two groupings—Casegood Systems and Contemporary Casegoods—to address the needs of multitasking executives. The most significant difference between the two groupings is the way in which technology accommodation and access to power and communications are achieved. While the Casegood System relies on the Tech Wall to house power and data connections, the Contemporary Casegood offering features a variety of simple technology accommodation and access capabilities that allow for greater configuration options and more attractive pricing. Nucraft, Grand Rapids, Mich. www.nucraft.com **CIRCLE 218**





◄ Return of a Modern classic

For more than three decades, Edward J. Wormley (right) was design director for the iconic midcentury Modern furniture company Dunbar. For the first time in more than 50 years, the most significant designs in the history of the company will once again be available. Comprising more than 45 offerings, the Edward J. Wormley Collection includes the Listen-to-Me chaise (far left), the Chamberlain 9' sofa, Golightly table, Gabrielle lounge chair (near left), and other notable pieces. Dunbar Furniture, High Point, N.C. www.collectdunbar.com **CIRCLE 219**

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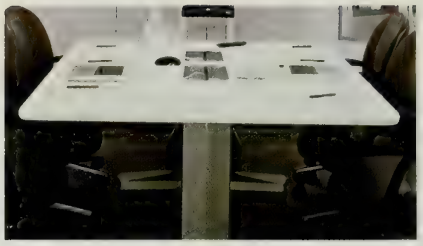
Job Name: Carmel Clay Public Library
Location: Carmel, Indiana
Architect: Meyer, Scherer, & Rockcastle, Ltd.
Designer: Browning Day Mullins Dierdorf, Inc.

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Products
Commercial Carpet & Furnishings



▲ Resilient recycled carpet flooring
A low-cost alternative to traditional carpeting or VCT, Finett recycled carpet is a durable solution for high-traffic environments, including airports, schools, malls, and industrial office settings. Offering the look and feel of carpeting, Finett received the highest-class rating for extreme wear in rigorous European wear testing. Finett is sold in 6' to 7' roll widths and some designs are available in modular tile format. Finett has an overall recycled content of 45 percent (postconsumer textile backing). Mats, Stoughton, Mass. www.matsinc.com. **CIRCLE 220**



▲ Smarter table shape
The e-table 2 trapezoid is Vecta's newest wire-ready meeting, presentation, and teleconferencing table. The trapezoid shape of the table gives everyone a better view of the camera and video display during presentations. The table also offers instant tabletop access to extra-large multifunctional utility bays. At the touch of a button, wide access doors silently glide open to reveal four electrical outlets, up to 12 voice/data outlets, or a variety of multimedia connectors. Vecta, Grand Prairie, Texas. www.vecta.com **CIRCLE 221**

► Ergonomics for the masses
Allsteel's new midpriced Sum chair features a gas-filled bladder—made of a puncture-proof material borrowed from the biomedical field—to provide automatic, self-adjusting lumbar support. Designed by Marcus Koepke (of Allsteel's #19 chair), Sum offers automatic weight-activated control and provides a universal fit for more than 90 percent of the population. Allsteel, Muscatine, Iowa. www.allsteeloffice.com **CIRCLE 222**

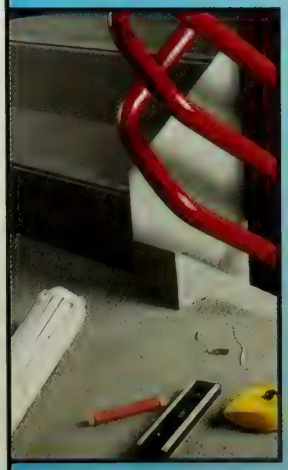


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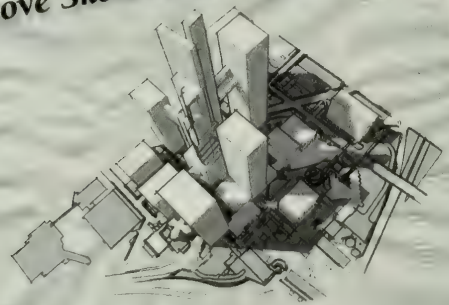
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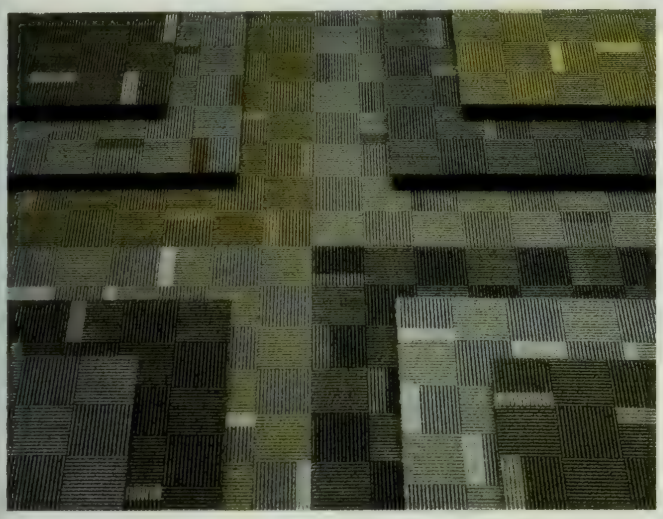
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▼ Like a well-tailored suit for the floor

Simply Artistic is the latest in a string of nine collections that make up Milliken's expansive Simply line. With almost 330 SKUs, the Simply line provides a wide range of coordinated designs that respond to client requests for simple, yet sophisticated styles. Simply Artistic, a 36" modular line in three designs, features the classic ribbed line as the collection's touchstone. Three patterns—Exhibit, Avant, and Display—are available in an array of 12 colors for the office market. Milliken Carpet, LaGrange, Ga. www.millikencarpetsamplestudio.com **CIRCLE 223**





▲ Look good on paper

The Paper Collection is one of the newest designs resulting from the collaboration between the family-owned Northern Italian manufacturer Plank and designers Raul Barbieri and Anna Giuffrida. The Paper Collection is available in side, arm, and swivel options and at bar and kitchen heights. Featuring a tubular, steel-polished chrome frame, the molded seat and back are available in colored laminate, aluminum laminate, and veneer. ICF Group, Taftville, Conn. www.icfsource.com **CIRCLE 225**

▼ Certifying the certifiers

Haworth is helping the U.S. Green Building Council (USGBC) in Washington, D.C., meet its own stringent guidelines for LEED CI (commercial interiors) certification with furniture and movable walls from both Haworth and its subsidiary, SMED. Some of the furniture choices meant using wheatboard instead of the industry standard MDF or particleboard. USGBC also chose FSC-certified cherry veneer for SMED's wood casegoods (Masters Series shown below). Haworth, Holland, Mich. www.haworth.com **CIRCLE 224**



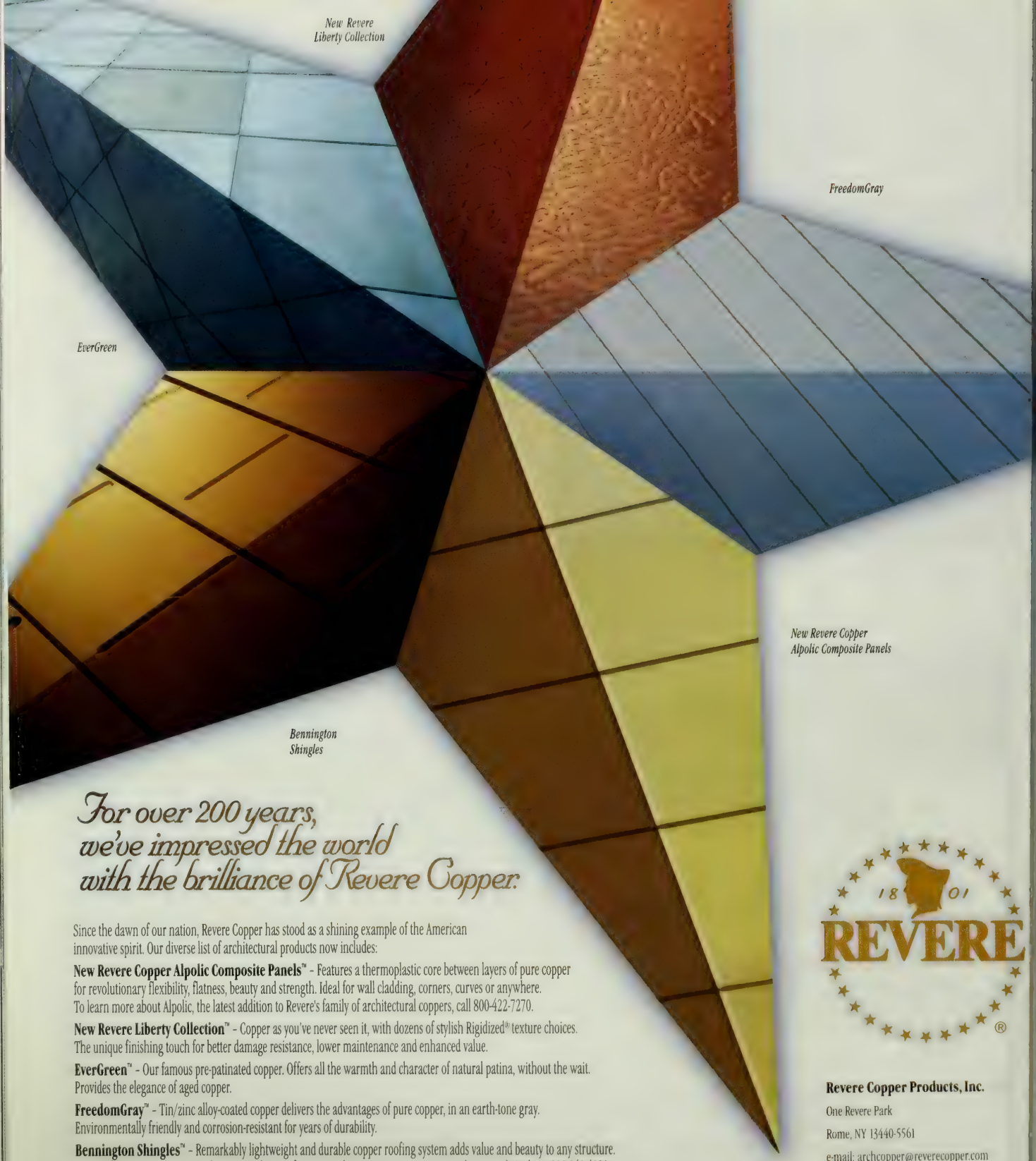
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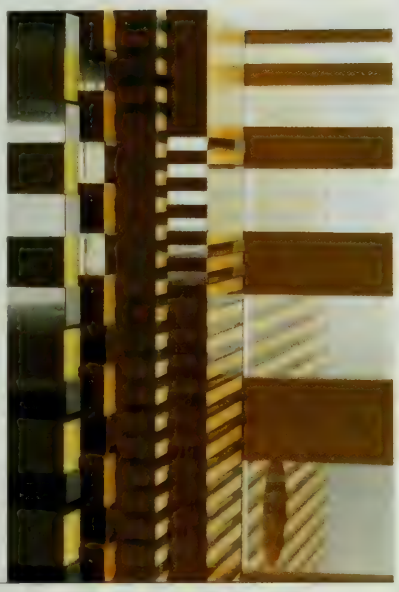
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Product Briefs

► Unusual partners



Architectural Systems received a top award for the Resin & Wood Collection at this year's edition of the retail design show GlobalShop 2004. A surface for both vertical and horizontal applications, the finish combines layers of solid hardwood—including beech, maple, alder, cherry, and walnut—and acrylic. The width of the wood and acrylic strips can be varied within the panel to create a signature look, and both a gloss-polished finish and frosted, unpolished funish are available. Architectural Systems, New York City. www.archsystems.com **CIRCLE 226**



◄ Customize your concept

The Concept Series is a new collection of concealed-fastener exterior metal wall panel profiles. Available in 12" and 16" widths, the panels are available in G-90 galvanized steel, aluminum, stainless steel, and Centria's Durallure finish system. Profile options consist of narrow ribs, medium-width ribs, and wide flat surfaces that can be used to create a single repetitive appearance or to generate a pattern or feature on a wall elevation. Centria, Moon Township, Pa. www.centria.com **CIRCLE 228**



► His American chair debut

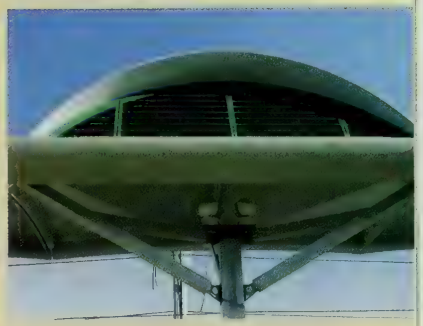
Parisian designer Patrick Norguet makes his American debut with the Orly lounge chair and sofa, available from Bernhardt. Norguet, who has worked in the fields of fashion, architecture, and product design, generated a stir in Milan four years ago with his "Rainbow" chair of colored Plexiglas layers for Cappellini. Orly comes in its own bright palette of colors in fabric and leather, and features brushed nickel legs and a back cushion that appears to plug into the back of the chair. Bernhardt Design, Lenoir, N.C. www.bernhardtdesign.com **CIRCLE 230**

Product of the Month Ductal Components

The first light-rail transit station constructed with Lafarge North America's Ductal high-performance composite material is expected to open for commuters at Shawnessy Station in Calgary, Canada, at the end of the month. The Ductal components, manufactured for Calgary architect Enzo Vicenzino of CPV Group Architects & Engineers for the City of Calgary, include 24¾" thick precast curved canopies (measuring approximately 16¾' x 20'), as well as struts, columns, beams, and rain gutters. The composite is significantly stronger than normal concrete: It has a compressive strength of 20,000 psi (six to seven times stronger) and a flexural strength of 4,000 psi (three times stronger).

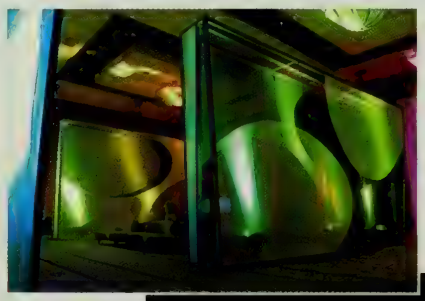
To validate the performance of the structural system and material, a full-size canopy prototype was sent to the University of Calgary for intensive, full-scale load tests. The results confirmed the Ductal canopy not only surpassed the test criteria, it easily carried full-factored live and dead loads without cracking. Lafarge N.A., Calgary, Canada. www.imagineductal.com CIRCLE 227

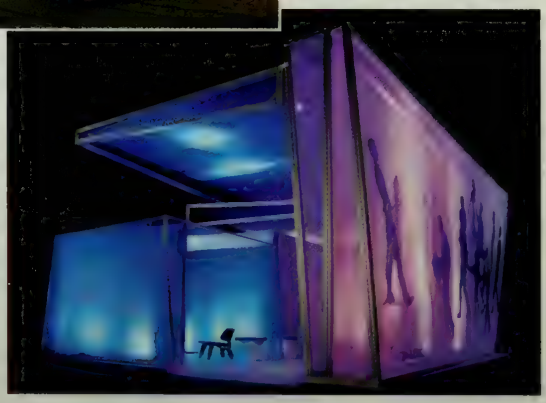




▼ A dynamic exhibition of fabric

Transformit, a tension-fabric-structure design, manufacturing, and rental company, has unveiled its new collection of tension fabric structures for exhibition, event, interior, and retail applications. The Dynamics collection, composed of six interchangeable components, features an aluminum extrusion frame that can hold up to three layers of fabric. Different lighting effects can be used between the layers to achieve visual motion. Transformit, Gorham, Maine, www.transformitdesign.com **CIRCLE 229**



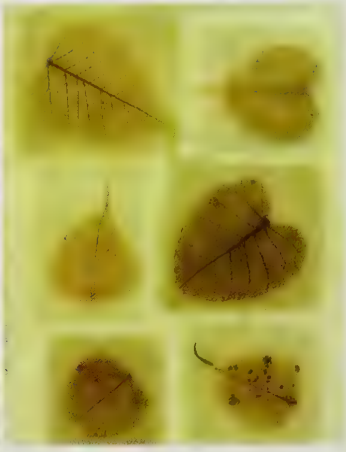


Product Briefs

▼ Exhibitions honoring textile artists

In the past few months, two different New York galleries featured the work of textile artists. The design gallery/store Moss introduced "fossilized textiles" (below right) created by artist/designer Luisa Cevese with light layers of polyurethane and precious fabrics, while Gallery Gen presented the work of master Japanese textile artist, Jun-ichi Arai. Over 30 of Arai's works, including cloths made of a flame-retardant fiber he has been secretly formulating for theater drapery, were on display (left). Gallery Gen, New York City. www.gallerygen.com **CIRCLE 231** Moss, New York City. www.mossonline.com **CIRCLE 232**





▼ Real ivory? Don't be nutty

Providence Artworks new Ivory of Tagua Collection features an ivory look-alike harvested from the Tagua Palm Nut. The cabinet knobs—hand-carved by Ecuadorian artisans—look, feel, age, and have the strength of elephant ivory. Used as an ivory substitute since the Victorian era (mostly for buttons), the demand for the Tagua nut declined after the discovery of less expensive synthetics. Providence Artworks, Venice, Calif. www.providenceartworks.com **CIRCLE 233**



► Concrete masonry units

Made of 10 percent recycled thermoset high-strength plastic powder, Sealtech concrete masonry blocks are 10 percent lighter than (and have a 2-hour fire rating, R value, and U value comparable to) standard concrete block. The water-resistant blocks come in 16 colors, with a split-face or smooth finish, in a standard 4", 8", and 12" size. US Technology, Canton, Ohio. www.sealtechblock.com **CIRCLE 234**



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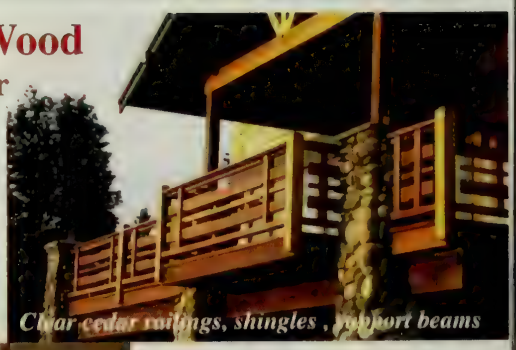
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▲ A day at the park
Mosaicist Jonathan Mandell recently completed an 8' x 6' mosaic commissioned by the Philadelphia Phillies organization as a permanent artwork for the new Citizens Bank Park. Mandell selected an array of semiprecious stones and minerals along with ceramic tile, glass, and metal for the ballpark scene: A cotton candy vendor by the visitor's dugout has cotton candy made of rose quartz; the ball approaching the outfield wall is made from iridescent glass; and the hot dog vendor on the bottom right has a metal hot dog caddy made from nickel tile. In addition to this scene, Mandell also created a 6' x 4' mosaic of Phillies player Jim Thome at the plate for the stadium. Jonathan Mandell Mosaics, Narberth, Pa. www.jonathanmandell.com **CIRCLE 235**

▼ A rug by any other name
Architect Michael Graves, FAIA, has designed a new collection of Wools of New Zealand Brand rugs from Glen Eden. The collection includes 18 patterns (Rose, below), each embracing Graves's experiences as an architect. All patterns are offered in custom shapes and sizes, and custom colors can be matched from a sample or selected from a palette of 42 standard shades. Wools of New Zealand, Calhoun, Ga. www.glen-eden.com **CIRCLE 236**





▲ New shade of mold-control
Temple-Inland has introduced Silent Guard TS, a mold-resistant version of its existing Silent Guard shaftliner panels. Designed for elevator shafts, stairwells, and area separation walls, Silent Guard maintains the same sound-control and fire-resistance of the traditional product. The TemShield protection system is manufactured in both the core and the surface of the panel and is recognized on the job by a new magenta face paper. Temple-Inland Forest Products, Diboll, Texas. www.templeinland.com **CIRCLE 237**

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Product Briefs

▼ Fabric duct filter system

DuctSox's Final Filter is the HVAC industry's first replaceable in-duct air filter for fabric duct that increases IAQ and energy savings while reducing outdoor air requirements and building maintenance. The cone-shaped Final Filter is designed for supplementing primary filter systems in new or retrofit buildings with DuctSox air dispersion. DuctSox, Dubuque, Iowa. www.ductsox.com **CIRCLE 238**

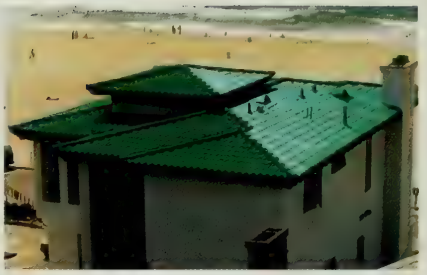




▲ Cladding alternative

The Fasec facade system combines wood composite sheathing, a base coat reinforced with glass fiber mesh, and a finish coat available in a range of colors. The system incorporates a lightweight foam resin binder and can be used with either steel or wood frames. Fasec is constructed with a ventilation gap and can be used for residential and commercial buildings. Facades, Springfield, Mo. www.facadesinc.com **CIRCLE 239**

► Coastal-approved roofing



The Met-Tile roofing system is now available in an aluminum substrate with a Meadow Green finish. Though it looks like tile, the roofing consists of the same profile as the standard Met-Tile system: 3' wide panels that are securely applied for wind- and weather-tight performance. Aluminum's superior resistance to corrosion and water makes the product ideal for coastal environments. Met-Tile, Ontario, Calif. www.met-tile.com **CIRCLE 240**



◄ Exterior-grade laminate

Used in Europe for more than 20 years, MEG (Material Exterior Grade) from Abet is an exterior high-pressure laminate consisting of layers of kraft paper impregnated with thermosetting phenolic resins. Bonded by heat and high pressure, the core and exterior color are all one piece. MEG is graffiti-proof, and most custom patterns can be created digitally for building exteriors. Abet, Englewood, N.J. www.abetlaminati.com **CIRCLE 241**

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Product Literature

Tile competition winners

Ceramic Tiles of Italy has released a new book titled *Ten Years of Design Excellence: Ceramic Tiles of Italy Across America*. Award-winning tile applications, culled from the Ceramic Tiles of Italy Design Competition, are the focus of the 114-page book, which features more than 25 projects. Italian Trade Commission, New York City. www.italiatiles.com **CIRCLE 242**

Faucet brochure

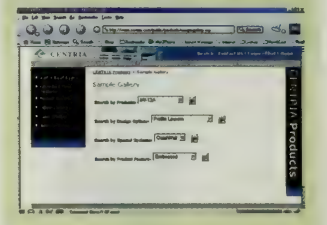
The 2003 Price Pfister faucet collections are featured in a new 60-page color brochure, which details 48 new faucets in a range of finish options and available configurations. Price Pfister Faucets, Lake Forest, Ill. www.pricepfister.com **CIRCLE 243**

Indoor/outdoor door catalog

Stilewood's 32-page architectural catalog features more than 65 of the company's standard interior, exterior, and custom door designs shown with glass and transom choices and various prehanging options. The catalog illustrates Stilewood's cross-machining capabilities and the many species options available. Stilewood, Port Coquitlam, British Columbia, Canada. www.stilewood.com **CIRCLE 244**

NEW SITES FOR CYBERSURFING

Product samples downloadable in MPEG format **www.centria.com/public/products/samplegallery.asp**



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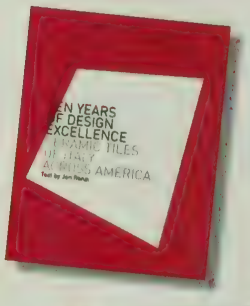
New site for contemporary kitchen range hoods **www.siriushoods.com**

Site that promotes the sustainability of Italian tiles **www.s-tiles.it**

Guide to greener specs

PPG Industries has outlined its new Ecological Building Solutions collection of glass, coatings, and paint for sustainable design in a new 12-page booklet called *It's Just Our Nature*, which provides specific guidance on how PPG products can help architects earn LEED credits for their projects or meet ASTM E 2129 standards for sustainable building. PPG Industries, Pittsburgh. www.ppg.com **CIRCLE 245**





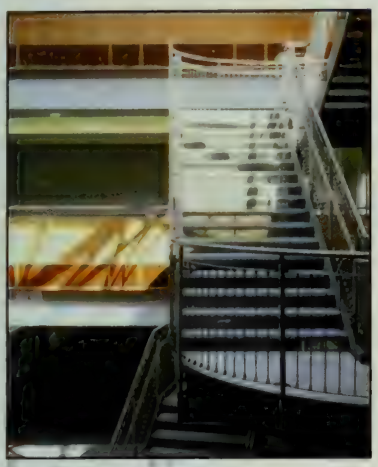




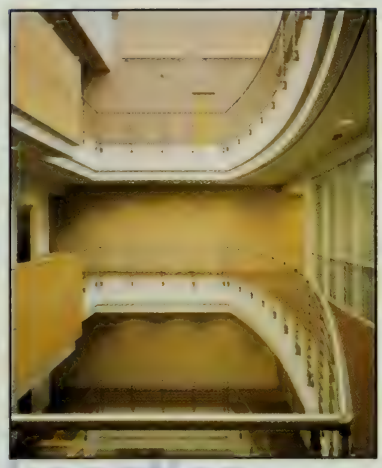
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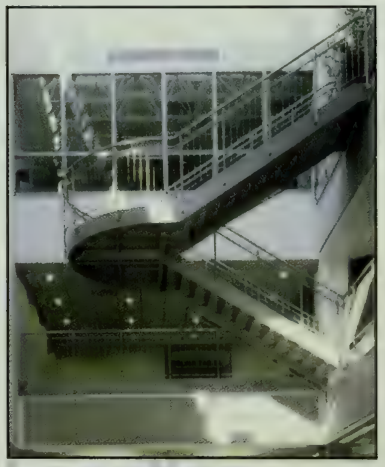
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Product Literature

Countertop installation CD

The Marble Institute of America (MIA) has released a new training CD-ROM for the natural stone industry. *Natural Stone Countertop Installation Overview* is the first in a series of instructional tools the association is developing for members and others within the stone industry. Marble Institute of America, Cleveland. www.marble-institute.com
CIRCLE 246

Signage system guide

Vista System's new *MCFT Guidebook 2 Signs* includes more than 500 examples of sign types professionals can design with Vista's new Modular Curved Frame Technology (MCFT) system. The 82-page guidebook came as a result of the market's demand for a modular system with custom-fabricated appearance and capabilities. Vista System, Sarasota, Fla. www.vistasystem.us **CIRCLE 247**

Residential recreations

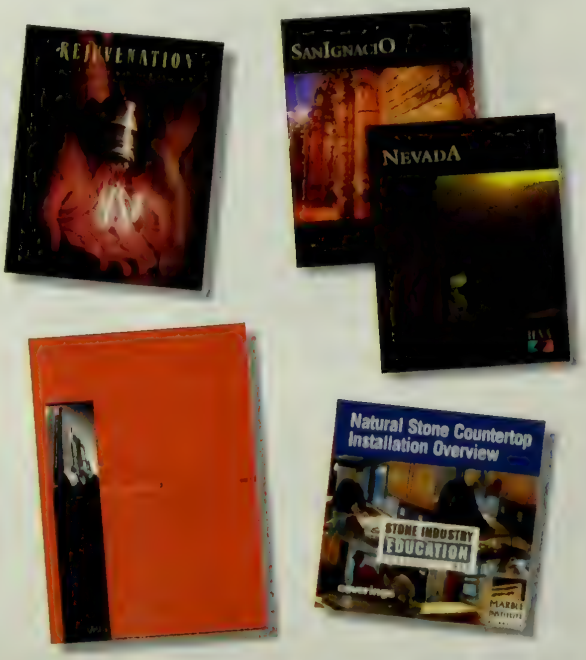
Rejuvenation's 124-page *Lighting & House Parts 2004 Resource Guide* features hundreds of recreations of original American lighting fixtures and house parts representing styles from 1880 to 1960. Showcased in the guide is Rejuvenation's new On the Porch collection of products for the front porch, including light fixtures, exterior door sets, door bells, brass numbers, and mailboxes. Rejuvenation, Portland, Ore. www.rejuvenation.com **CIRCLE 248**

Porcelain tile brochures

Ilva S.A. offers two new brochures that highlight the firm's San Ignacio and Nevada series of porcelain tiles, inserts, and listellos through detailed photographs and technical product information. 305/667-7090. Ceramic Consulting Corporation, Coconut Grove, Fla.
CIRCLE 249

Customizable workstations

Allsteel has introduced several publications to support its new Landscape Surfaces program in partnership with Pantone that allows any color in the system to be applied to Terrace tiles. In addition to a *Design Guide* that provides designers, specifiers, and end users with a comprehensive offering of workplace solutions using the Terrace workstation family, Allsteel offers a *Surfaces and Materials* brochure that features the newest options for Terrace tiles. Allsteel, Muscatine, Iowa. www.allsteeloffice.com **CIRCLE 250**



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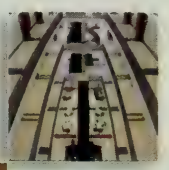
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ATTENTION ALL BUILDING PRODUCT MARKETERS:

PLEASE SUBMIT YOUR NEW PRODUCTS TO ARCHITECTURAL RECORD'S PRODUCT REPORTS 2004

Product Reports will again be a major editorial feature in the December issue of ARCHITECTURAL RECORD, presenting the most interesting and useful new building products that will be available to the architect, specifier, and designer in 2005. A panel of architects, consultants, and editors will select products for publication from those submitted by September 3, 2004—and we very much want your company to be included.

Like every **Product Reports** since our first one in 1972, this feature is an A&D reference to product introductions of the previous year and provides our readers with the most up-to-date information available.

There's no entry fee. Just review the product categories listed under "Submit" at **www.archrecord.com** to locate the section most appropriate for your product. Our panel will view each product category as a group, so please include an image of each submission in a slide, transparency, glossy color photo, or color printout of a digital image. If you send a CD, you must provide a labeled color printout of each image that is on the disk. Please make sure the digital image is a high resolution TIFF (300 DPI, at least 4 x 5 inches). If you have a sample of your product (no larger than 8 x 10 inches), please include it with your submission. E-mailed submissions will not be accepted.

Send the submission form (following page), image, sample, and descriptive material to:

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Two Penn Plaza, 9th Floor
New York, NY 10121

Please take a few minutes to round up the photos and information needed. If you have any questions, send a note to the Products Editor, Rita F. Catinella, at rita_catinella@mcgraw-hill.com.

DEADLINE: SEPTEMBER 3, 2004

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1. **Product category and section:** _____

(See "Submit" at www.archrecord.com for possible listings. For multiple submissions, please photocopy form. Submissions are limited to three per main category—furnishings, lighting, etc. Do not tape slides to form. Only send products introduced after September 2003. Do not send a CD without including a color printout.)

2. **Indicate type of image included with this form:**

❑ Slide/transparency ❑ Glossy color photo ❑ Color printout (with high res image on CD)

(Photography returned only upon request.)

3. ❑ **A 50- to 60-word description of the building product, or a press release, catalog page, or insert that gives pertinent architectural and performance information is included.**

4. ❑ **A sample no larger than 8 x 10 inches is included (optional).**

5. **Please fill in completely:**

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Program title: **"Architects Discover Bridge Design Can Be the Perfect Union of Art and Science," Architectural Record (06/04, page 279).** 064EDITO
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3.	a	b	c	d	**8.**	a	b	c	d
4.	a	b	c	d	**9.**	a	b	c	d
5.	a	b	c	d	**10.**	a	b	c	d

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Program title: **"Window Installation," sponsored by JELD-WEN Windows & Doors (06/04, page 311)**
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4.	a	b	c	d	**9.**	a	b	c	d
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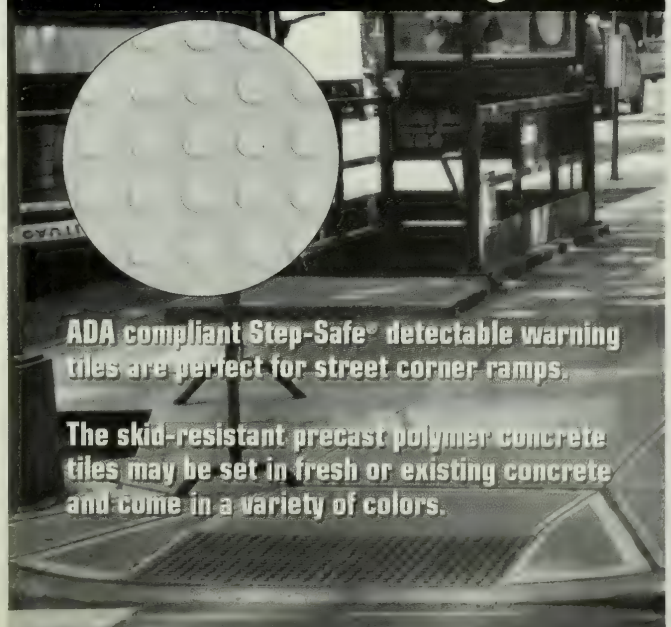
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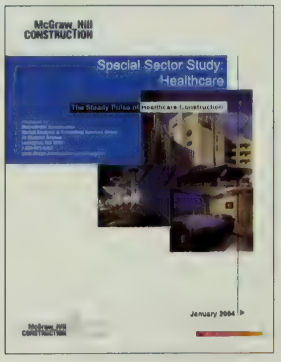
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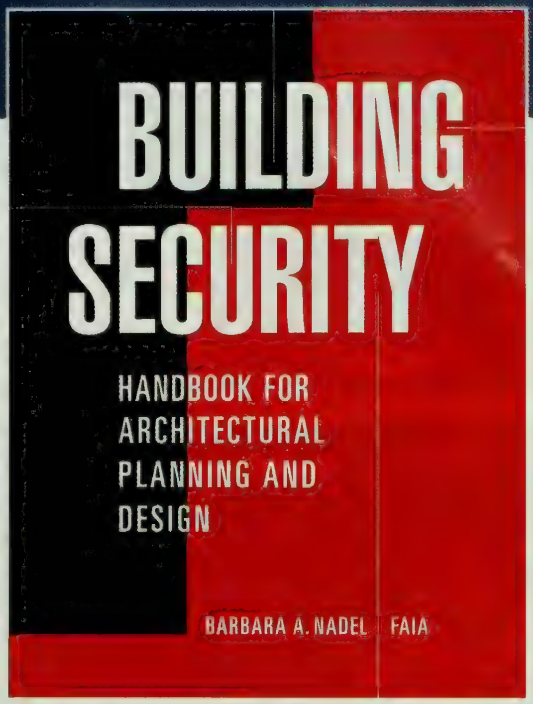
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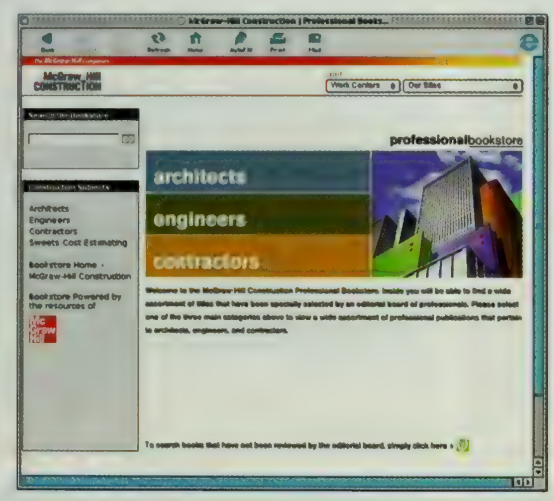
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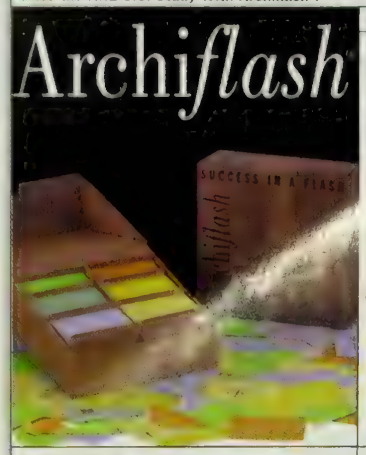
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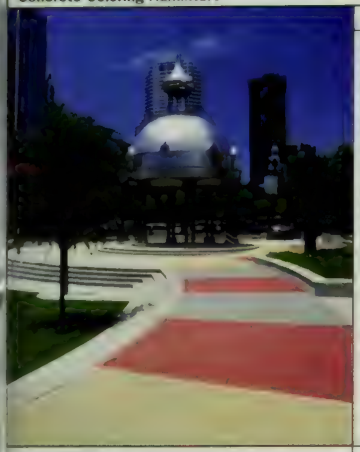
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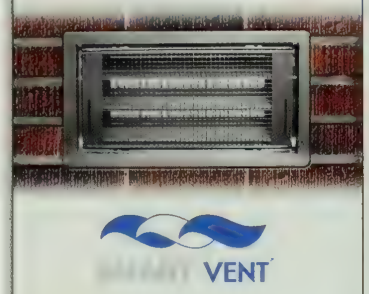
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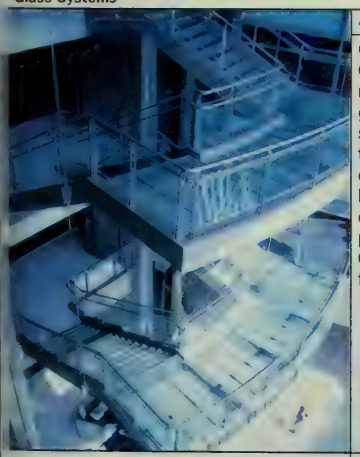
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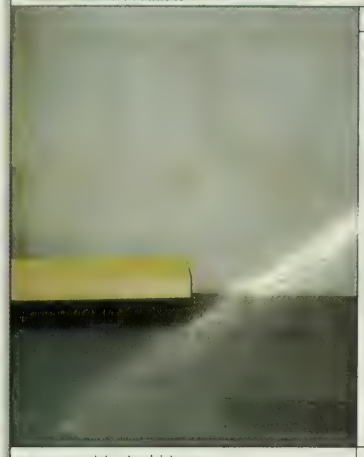
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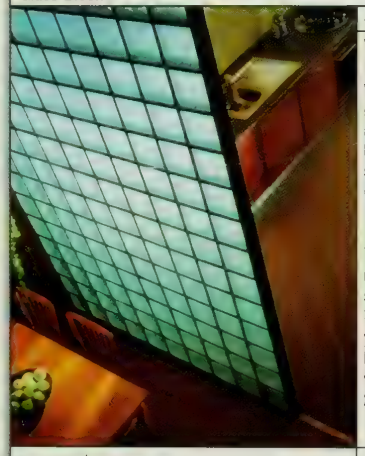
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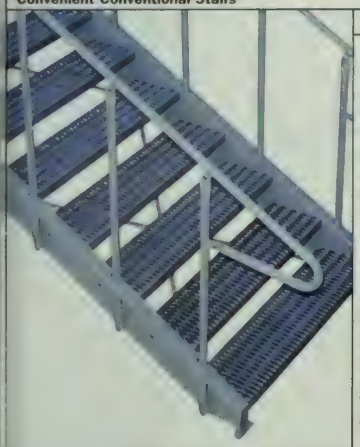
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7 Thermal & moisture protection



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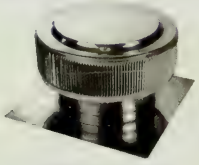
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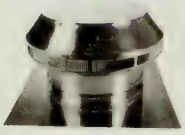
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Metal Wall Cladding

7 Thermal & moisture protection



ATAS International Inc. introduces the INSPIRE Wall System, a new metal wall cladding made from .032 aluminum with tiny perforations in a heat absorbing surface. The premium finish is available in sixteen standard colors. Mounted a few inches from the main wall, preferably on a southern exposure, fresh air is drawn through the perforations and directed into the building with a fan and duct system. Air space between the walls also acts as an insulator. INSPIRE Wall is environmentally friendly, in that it is using clean, natural energy, thus lowering the need for fossil fuels. The result is improved indoor air quality, free solar heating, and a reduction in HVAC costs.

AIA Booth #1973 | 176

EcoStar

Roof Tiles | 800-211-7170

7 Thermal & moisture protection



EcoStar's Majestic Slate™ Beaver Tail tiles offer a rounded slate style and unique color variations to create beautiful architectural options for premium steep-slope roofing. Developed using 100% recycled rubber and plastics, Beaver Tail offers an environmentally friendly roofing alternative. All EcoStar tiles offer an elegant look for steep slope applications along with longevity, durability, and lightweight benefits. Beaver Tail commands an impressive 50-year warranty and offers Class A Fire and Class 4 Hail Resistance. For more information, please call or visit the Web site.

www.premiumroofs.com | AIA Booth #521 | 179

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T: (212) 904-2010 / F: (609) 426-7136
deidre_allen@McGraw-Hill.com

Polyglass

Roofing Membranes | 800-222-9782

7 Thermal & moisture protection



POLYGLASS® offers a wide range of roofing products, including their revolutionary SA Self-Adhesive roofing membranes with ADESO™ technology. Offering a full line of true APP, SBS, and TPO roofing membranes, Polyglass comprises the latest in asphalt adhesive technology, as well as substantial, proven weatherproof compounds, featuring smooth and mineral granule surfacing available in various colors. Also known for their steep-slope roofing products, Polystick underlayments, which also utilize ADESO technology, are leading residential SA products. POLYGLASS brings over 30 years of roofing and manufacturing technology to the industry, operating worldwide with headquarters in Italy. For more information visit the Web site.

www.polyglass.com | 180

Air Louvers, Inc.

Fire-Rated Glazing

8 Doors & windows



Air Louvers, Inc., a division of the Activar Construction Products Group, announces the addition of a wire-free, safety-rated, fire-rated glazing material. To meet the new glazing requirements of the IBC code, the KERALITE-FRF, SWISSFLAM, and PYROSWISS are rated to CATII impact rating and fire rated for use in fire doors up to 3-hr. and up to 1,500-sq.-in. in a 1-1/2-hr. fire-rated door. All three products are ideal choices for vision lites in fire doors, sidelites, and windows. For more information on the Air Louvers product line see the Web site.

www.airlouvers.com | AIA Booth #2425 | 183

Sto Corp.

Air Barrier & Moisture Control

7 Thermal & moisture protection



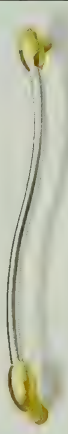
For a seamless, vapor-permeable moisture and air barrier on sheathing, choose Sto Guard®, a fluid-applied barrier for moisture control and mold prevention. Sto Guard is a breathable air barrier that provides superior protection against air and moisture intrusion in a variety of applications, including underneath brick, wood, vinyl, cement siding, and exterior insulation and finish systems (EIFS). Sto Guard: reduces the risk of condensation and mold caused by a leaking wall system; provides breathability for proper vapor diffusion and condensation control; and installs easily by paint, waterproof, or drywall contractors without special training.

www.stocorp.com | AIA Booth #1615 | 181

Doug Mockett & Co.

Contemporary Door Handles | 800-523-1269

8 Doors & windows



Sensous "S" curve stainless steel door pull is anchored by two oval brass supports. Overall it is 38-3/4-in.-high. HDL31 is just one of five initial door handle offerings from Doug Mockett & Company. These handles are imported from Confalonieri & C., one of Italy's most prominent designers and makers of contemporary furniture hardware and accessories. Mockett has just been named exclusive U.S. distributor for Confalonieri and is celebrating by issuing in June a new 275-page color catalog filled with many new designs of their office and computer furniture hardware, as well as a brand new section of hardware for kitchen, bath, and closet. Email info@mockett.com.

AIA Booth #1131 | 184

Trespa North America, Ltd.

Facade Cladding Panels

7 Thermal & moisture protection



Trespa Meteon is a unique exterior facade cladding system suitable for both new construction and re-cladding projects. Meteon exterior systems offer many ways to be expressive, either subtly or boldly. Trespa Meteon is available in a variety of standard solid colors, natural prints, and rich metallic hues as well as satin, gloss, and rock textures. Meteon panels are completely color fast, with patented UV-resistant technology. They resist acid rain, air pollution, and impacts and will not rust or delaminate. They require little upkeep, are easy to clean, and are made from renewable resources. Trespa is BEES listed, a member of the USGBC, and ISO 14001 certified. Trespa's Meteon panels protect your projects while expanding your possibilities.

AIA Booth #3119 | 182

Eliason® Corporation

Double Action Doors

8 Doors & windows



Easy Swing® Doors manufactured exclusively by Eliason Corporation. Model PMP-2 High impact traffic door reinforced throughout the impact area and back spline. Prevents cracking at hinge location and warping at swing edge. Strong, durable, and yet flexible enough to absorb the initial impact without the use of spring bumpers. Excellent for use in sales to stock room use. All doors are custom manufactured to your finished opening. Use of doors range from sales to stock room, walk-in coolers, delis, secondary freezer doors, restaurants, or just personnel doors. Easy to install and can be shipped directly to the job site.

www.eliasoncorp.com | AIA Booth #2353 | 185

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Fimbel Architectural Door Specialties

Custom Residential & Commercial Wood Doors



8 Doors & windows

Since 1924, the Fimbel family has been engineering and manufacturing custom residential and commercial wood doors for architectural and restoration projects. Its Roaring 20's and Early American Carriage House Doors re-create the look and detail of turn-of-the-century swing doors with all the modern ease and convenience of sectional door operation. Attention to detail and hand craftsmanship goes into every door the Fimbel family produces. Beyond its standard designs, customers can create architectural designs of their own, using various wood species, tru-divided windows, arch tops, and unique overlay designs. Technical support, including CAD drawing design and layout, is available. Use Fimbel's 80 years of experience to create your unique architectural statement.

www.fimbelarchitecturaldoor.com — 186

Nathan Allan Glass Studios, Inc.

Cast Glass Flooring — 604-277-8533



8 Doors & windows

One of the most incredible new products in the construction industry for 2004 is Nathan Allan's exclusive cast glass with faux color finish floor panels. Produced in 3/8-in., 1/2-in., 5/8-in., and 3/4-in. thicknesses, these floor panels can be tempered to increase the strength of the glass ten fold, and are available in four combinations of multi faux finishes. For added safety, Nathan Allan has incorporated its Glass Sandpaper safety finish on the top surface to help create a non-skid environment. Glass Sandpaper enables the shoe tread to grip the glass without slipping. Panel sizes can be produced up to 6-ft.-6-in. by 11-ft.-6-in., in any shape possible.

www.nathanallan.com — AIA Booth #648 — 189

IGT Glass

Anti-Reflective Glass — 480-767-8220

glaströsch



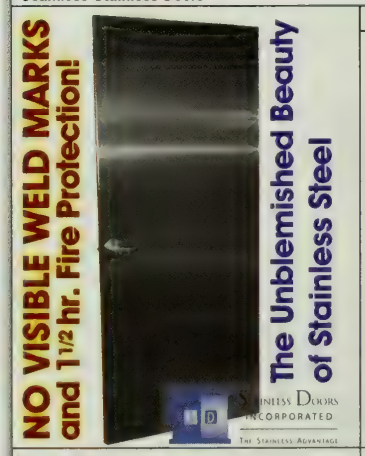
8 Doors & windows

LUXAR reduces glare and reflection by 99.5%, making every application where it is used so clear that the glass is almost invisible. When high visibility is desired Luxar is the product of choice. It is an ideal product for storefronts, such as Toys R US, pictured, museums, stadiums, view homes and restaurants, display cases, and projection rooms. Contact IGT Glass for more information.

www.luxar.ch — 187

Stainless Doors, Inc.

Seamless Stainless Doors — 888-438-8677



8 Doors & windows

The stainless advantage: The engineers at Stainless Doors, Incorporated have developed a steel stiffened door from stainless steel, with internal double vertical hat channels and no visible marks on the door face skins, maintaining the aesthetics while building in durability. Features: (1) flush door standard; (2) 18, 16, 14, and 12-ga. steel available; (3) type 304, 316 optional; (4) finish #4 satin standard, optional finishes available; (5) vertical grain; (6) edge seam (lockseam) or optional seamless; (7) vertical double hat stiffeners; (8) fiberglas between stiffeners; (9) inverted top and bottom channels; (10) hardware—standard door preparations. Fax number 888-438-8677. Email info@stainlessdoors.com.

www.stainlessdoors.com — 190

Jerome R. Durr Studio

Custom Glass Art — 800-552-9836



8 Doors & windows

Jerome R. Durr Studio, providing residential, liturgical, commercial, and public art since 1973.

www.jeromedurr.com — AIA Booth #1793 — 188

Technical Glass Products

Fire-Rated Doors & Frames — 888-397-FIRE



8 Doors & windows

Technical Glass Products offers Fireframes® Heat Barrier Series framing. The line of fire-rated doors and frames provides a dramatically different profile than traditional hollow metal steel doors and framing, as well as the ability to block heat transfer. Heat Barrier frames allow extremely large expanses of glass and are particularly well suited to commercial applications where aesthetics are important. Installation is easy and similar to a typical storefront system. The doors and frames are listed with UL for fire areas requiring ratings up to 2-hr. Heat Barrier framing is compatible with Pilkington Pyrostop™ and other glass fire wall products. Fax number 800-451-9857. Email sales@fireglass.com.

www.fireglass.com — AIA Booth #3139 — 19

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VETROTECH Saint-Gobain

Fire-Rated Glass Solutions | 888-803-9533



8 Doors & windows

Backed by the depth and resources of more than 300 years of glass history and expertise, Vetrotech Saint-Gobain is able to offer the industry's broadest range of products based upon diverse technologies and manufacturing processes. Clear wire-free aesthetics that balance cost and performance against design and code requirements. For detailed information call or visit the Web site.

VETROTECH FIRE RESISTANCE Saint-Gobain Glass Solutions

www.vetrotechUSA.com | AIA Booth #1253 | 192

Giacomini

Radiant Ceiling Panels | 310-821-7528



9 Finishes

Giacomini's new radiant heating and cooling ceiling panels give a new look to buildings' HVAC systems. The radiant ceilings can provide as much as 40% energy savings compared with standard VAV systems. They also provide space and construction savings, as well as a healthier and more comfortable building environment. They are engineered for new construction or retrofit of old buildings. The ceilings come in various custom designs. They are also available in standard 2-ft. by 2-ft. and 2-ft. by 4-ft. tiles compatible with a 15/16-in. grid system. They have been installed in hospitals, airports, office buildings, and clean rooms. Email info.northamerica@giacomini.com.

AIA Booth #2629 | 195

Weather Shield Windows & Doors

Wood Interior Windows & Doors



8 Doors & windows

Engineered with unique features and built for unparalleled performance, the Weather Shield Legacy Series is simply one of the best window and door lines available for custom and luxury homes. Available in tilt double-hung, casement, awning, and direct-set windows and French doors, the premium windows feature elegant wood interiors in a variety of wood species from Weather Shield's Custom Wood Interiors Collection™.

www.weathershield.com | 193

Hakatai Enterprises, Inc.

Glass Mosaic Tile | 888-667-2429



9 Finishes

Hakatai Enterprises is an importer and distributor of glass mosaic tile with the experience and resources to handle any project regardless of size or type. Hakatai's glass tile is ideal for commercial, residential, interior, and exterior applications and found in hotels, restaurants, pools, spas, and homes around the country. Hakatai stocks five glass tile lines, 24 standard blends, and six standard gradients and has in-house, custom capabilities for gradients, blends, and murals. Quick and efficient turnaround time on orders. Immediate response to inquiries on stock levels, pricing, and freight quotes.

www.hakatai.com | 196

Zero International, Inc.

Edge Seals for Category B Fire Doors



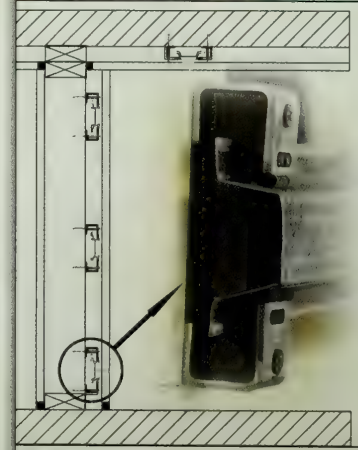
8 Doors & windows

Zero International's #188S compression seal and #8144S gasket are UL-approved for use as Category G edge sealing systems and as Category H smoke and draft control gasketing for 20-min. Category B fire doors. These silicone systems are surface-applied with pressure-sensitive adhesive and eliminate the need for intumescence in the door assembly. Category G and Category H are testing-agency classifications used to standardize the testing and labeling of doors and gasketing under positive-pressure code requirements for fire-rating and smoke control, respectively.

www.zerointernational.com | AIA Booth #1409 | 194

Kinetics Noise Control

Sound Control Walls & Ceilings



9 Finishes

Isolated wall and ceiling systems are a highly effective method for solving noise or speech privacy problems. Resiliently mounted gypsum board or double wall assemblies are constructed to minimize sound transmission from one occupied space into another. Incorporating Kinetics Noise Control Model IsoMax, designers can create simple, easy to build walls and ceilings that do not require resilient channel, double-wall construction, and/or additional layers of gypsum board. Increasing the air cavity and resiliently decoupling the mass of the gypsum board from the non-isolated structure (e.g., joists, studs, masonry) effectively and economically controls noise transmission.

www.kineticsnoise.com | AIA Booth #2516 | 197

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L.M. Scofield Company

Concrete & Cementitious Flooring | **800-800-9900**



9 Finishes

Stylish Scofield flooring systems: For beauty and durability, concrete and cementitious toppings provide stylish flooring for high traffic areas in offices, lobbies, public spaces, food service, and retail areas. Scofield Systems offer diverse choices—ranging from monochromatic toppings to translucent, reactive stains for faux finishes and dramatic graphics.

www.scofield.com | **AIA Booth #2031** | 198

B. J. Industries, Inc.

Elevating Systems for Sinks | **952-890-3870**



10 Specialties

B. J. Industries, Inc. is your foremost supplier of elevating systems for sinks, serving the needs of long term care facilities, hospitals, hair salons, barrier-free housing units, private residences, and more. An Adjust-a-Sink System is an attractive solution to problems associated with standard height sinks. Visit the company's Web site.

www.bjindustries.com | **AIA Booth #1517** | 301

Nova Distinctive Floors

Cork Floating Floors | **866-576-2458**



9 Finishes

Nova cork floating floors artistically embrace design, function, and environmental consciousness. Manufactured in 1-ft. by 3-ft. "klick" (glueless) system planks that don't adhere to the sub-floor, Nova cork's 2004 line boasts 28 designer patterns, including Mesa (shown), that are sure to bring beauty and comfort to your home. Harvested from forests that meet stringent environmental, social, and economic standards, Nova cork, linoleum, and underlayment products have received the "Green Spec" distinction from Building Green, Inc., as well as FSC and SCS certifications and offer a 20-year residential warranty and 10-year commercial warranty. Fax number 310-830-9589. Email c.matthews@novafloorings.com.

www.novafloorings.com | **AIA Booth #1441** | 199

Cherry Tree Design

Shoji Screens, Passage Doors & Lighting | **800-634-3268**



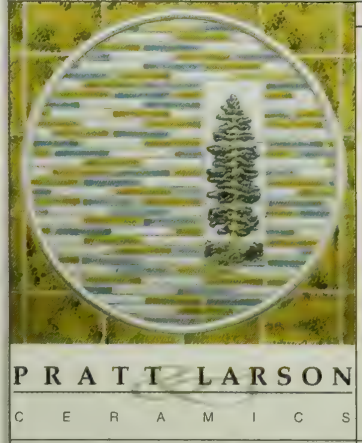
10 Specialties

Experience the artisan touch—sophisticated design, exceptional craftsmanship, natural warmth. Custom pocket doors, passage doors, room dividers, window coverings, closet doors—made in Shoji Style. Hardwood lighting and mirrors featuring contemporary, Arts & Crafts, and Asian styling. Hand-crafted in the U.S. using unsurpassed joinery, solid hardwoods, and beautiful durable facings. Perfect for commercial, hospitality, and residential projects. To learn more about Cherry Tree Design's complete product line call its toll free number or visit its Web site. Fax number 406-582-8444. Email contact@cherrytreedesign.com.

www.cherrytreedesign.com | 302

Pratt & Larson Ceramics

Handcrafted Tile



9 Finishes

Pratt & Larson Ceramics manufactures a versatile handcrafted tile line that includes design traditions from Arts & Crafts, Classical, and Contemporary styles. They are a leader in the industry, creating and producing 14 style design lines and four distinctive glaze lines, as well as several specialty glaze surfaces. Any tile can be ordered in any of the 300 standard glaze colors. Decorative tile may also be ordered hand-painted to accent the relief designs. With over 20 years of experience Pratt & Larson will make your tile as special as your home and your ideas.

www.prattandlarson.com | 300

Eclipse Lighting Inc.

Custom Engraving



10 Specialties

Have your logo light up the sky. Business logos, directional symbols and informational signage can be replicated with option *Gravura* in the Galileo Family for high visibility and attention-getting accent lighting in corporate headquarters, retail stores, restaurants, bars, clubs, theme parks, hotels, museums, theaters, campuses, airports, auto dealerships, healthcare facilities, and more. Match that with color-changing LEDs, recently added to the lamping options and you can take your lighting to new heights. Available in round, tri-angular, and rectangular shapes, Galileo Series sconces offer a wide variety of styles and sizes from 9-in. to 54-in. tall; artistically designed yet durably built.

www.eclipselightinginc.com | **AIA Booth #1391** | 30

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FabriTec Structures

Innovative Fabric Designs



10 Specialties

Shade Concepts is a design/build firm specializing in Tensioned Fabric Structures ranging from pre-engineered modular structures to custom-built designs. In an ever-changing technological era, high visibility and individualized identity play a part in positioning a company for exposure in a competitive environment. Shade Concepts can assist you by providing visual impact with dramatic architectural forms utilizing tensioned fabric membranes. A variety of fabrics with varying degrees of transparency allow for new architectural dynamics. Modern fabrics combined with high-performance support structure materials can be utilized for their specific properties such as UV resistance, low maintenance, non-combustibility, and illumination.

AIA Booth #826 — 304

Penco Products

Electronic Lockers



10 Specialties

Penco Products has introduced the SmartLocker™, an electronic locker that utilizes computerized identification technology to grant or restrict access. SmartLockers eliminate the need for conventional locks and keys. The system is designed to be adaptable to accept whatever means of personal identification is in use by an organization, such as employee or student ID cards or proximity devices. Penco can also provide dedicated locker access cards. Applications for SmartLockers include schools, health clubs, recreational facilities, retail establishments, police departments, and much more. Lockers are networked to a central computer in an administrative office, where usage can be monitored and access codes controlled.

www.pencoproducts.com — AIA Booth #2493 — 307

Gyford Productions

Panel Hinge Clamp — 775-829-7272



10 Specialties

The hinge clamp can be used to join StructureLite framed or unframed panels together. The panel clamps rotate within the hinge clamp to achieve any angle, from 180° out to parallel. The panel clamp attachments will accept panels of any material from 1/4-in. to 3/4-in. in thickness. The hinge clamp attached and adjusts with the turn of one screw. Gyford Productions, creator of the original Standoffs and StandOff Systems™, stocks over 250 components. Custom sizes, colors, and finishes available. Most stock items ship same day. Complete design and technical support available. Made in the U.S. Call for a free catalog.

www.standoffsystems.com — AIA Booth #2391 — 305

New Holland Church Furniture

Curved Church Pews — 800-220-1465



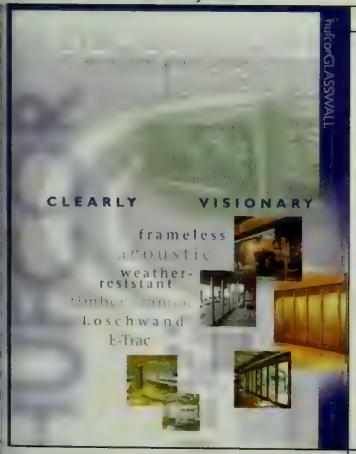
12 Furnishings

Curved pews are "Round For A Reason"™ and are designed and manufactured by New Holland Church Furniture. Curved pews are designed for maximum seating, curved for efficient use of space, designed to enhance worship, created for community, uniting the family of God. New Holland Church Furniture is a certified member of the Architectural Woodwork Institute (AWI), so you can be assured of the very highest quality. Email nhcw@newhollandwood.com.

www.newhollandwood.com — 308

Hufcor, Inc.

Movable Glass Partition Systems — 800-542-2371



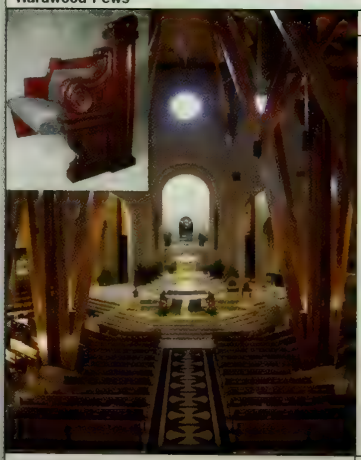
10 Specialties

Hufcor introduces a complete new line of movable glass partition systems featured in a new brochure. The line features frameless storefront style panels with patent-pending batwing passdoors, acoustic and weather resistant glasswalls without floor tracks, woodclad products, and electrically controlled E-Trac tracking system and Loschwand overhead systems. Call or visit the Web site.

www.hufcor.com — AIA Booth #2413 — 306

The Marshall Company

Hardwood Pews — 208-642-3344



12 Furnishings

For over 75 years, The Marshall Company has offered distinctive church furnishings throughout the U.S. and Canada. A longtime leader in the church furniture business, Marshall prides itself on being one of the few companies in the U.S. to still manufacture only quality solid hardwood pews. That means no veneers, no chipboard cores, no plastic laminates, just the classic beauty and durability of solid Northern red oak. But materials aren't everything; Marshall's highly skilled craftsmen are dedicated to designing furniture that is beautiful and functional, as well as being affordable. Fax number 208-642-9537. Email pews@marshallpews.com.

www.marshallpews.com — 309

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Finlandia Sauna Products, Inc.

Precut Saunas | 800-354-3342

13 Special construction



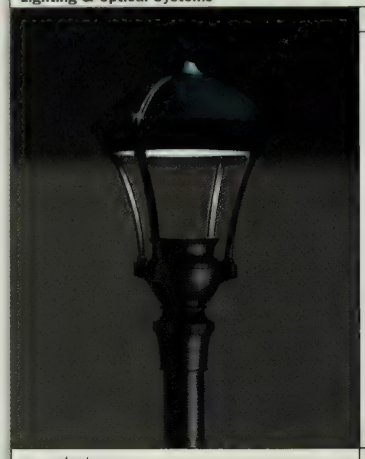
Finlandia Sauna has manufactured exclusive and authentic saunas since 1964. Finlandia offers precut sauna packages and modular sauna rooms as affordable luxuries that can be included in any remodel or new construction. The company markets four all-clear western softwoods and is the only manufacturer to use 1-in. by 4-in. paneling, instead of the cheaper 1/2-in. by 4-in. material used by others. Finlandia's packages include all room parts, a choice of a Finnish-made electric heater, a prehung door with choice of glass, and all necessary accessories. Finlandia's exciting new heater, the EverReady, is an excellent option for the person always on the go. Fax number 503-684-1120. Email info@finlandiasauna.com.

www.finlandiasauna.com | 310

Architectural Area Lighting

Lighting & Optical Systems

16 Electrical



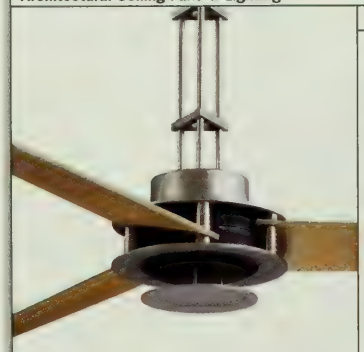
The new period style fixture from AAL combines optimal lighting performance with aesthetics in a traditional form. The Providence utilizes efficient lamp sources and electronic ballast options for longer lamp life and color correction. Optical systems include vertical and horizontal reflectors, as well as an indirect version for even, glare-free illumination. All optical systems earn IES cutoff classifications in compliance to Dark Sky ordinances. Other options include Quartz Restrike Lamps for HID sources in compliance to Egress Lighting codes, a Lightly Diffused Lens to conceal the fixture's interior and reduce the lamps brightness, and House Side Shields to cut off light shining onto adjacent properties.

www.aal.net | AIA Booth #223 | 313

G Squared Art

Architectural Ceiling Fans & Lighting | 877-858-5333

15 Mechanical



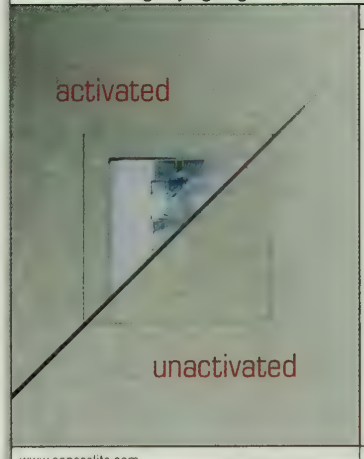
Balanced design that pleases the eye, creates a mood, a gentle breeze. Moving sculpture. The San Francisco ceiling fan—a GOOD DESIGN Award winner. Whisper quiet, powerful, and beautifully made, this timeless design is available with or without a light. Versatile—can be used on 8-ft. ceilings with optional 6-in. downrod or on cathedral ceilings with downrods up to 6-ft.-long. Suitable for sloped ceilings of up to 29°. Lifetime warranty. To buy high-design architectural fans and lighting, please visit G Squared's Web site or call between 6 A.M. and 6 P.M. PST.

www.g2art.com | 311

Concealite Life Safety Products

Customized Emergency Lighting

16 Electrical



Artistry and architecture merge when designers incorporate Concealite's 5000 Series into their interiors. The 5000 Series can be customized to fit any interior color or texture. Whether your walls are painted with hard-to-match color, unique wallpaper, rustic wood grains, or a combination, Concealite can customize the frame and panel of each 5000 emergency light to blend into its surroundings and complete the look of your space while still meeting all of the emergency lighting requirements. For more information, please visit the Web site.

www.concealite.com | AIA Booth #1387 | 314

Alera Lighting

Architectural Fluorescent Lighting | 509-921-8300



16 Electrical

The Cûrv Louvered offers the best of linear indirect combined with the best of direct lighting. The slim profile measures a mere 9-1/2-in.-wide by 2-3/4-in.-high. Available in T8, T5, or T5 HO with one, two, or three lamps in cross section, this attractive product features patented die cast inner end plates for consistently straight rows. Modular mounting points, quick-connect wiring, and variable optical distribution options make this the perfect selection for schools, offices, retail, and health care facilities.

www.aleralighting.com | 312

Prima Lighting Corp.

Light Fixtures | 866-885-4915

16 Electrical



The Multi light fixture series gives you complete freedom and control over your light source with high-end, elegant, and intriguing style. Easily direct the light exactly where you want and tailor the power to your needs. Choose a nine, six, four, three, or two light configuration available as a wall (shown), pendant, floor, or table light. Chrome and matte silver finishes. Clean, architectural multipoint canopies are available for the pendants. Please visit Prima Lighting's Web site or call to find out more about its breakthrough OPUS line of contemporary architectural lighting.

www.primalighting.com | 31

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Build With The Best

Associated Builders and Contractors
Accredited Quality Contractor



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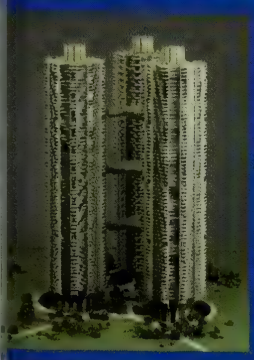
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Sound and space interface in Christopher Janney's unique world

Interviewed by Jane F. Kolleeny

Christopher Janney's work represents a fusion of his two passions—music and architecture. Three years after graduating in 1973 from Princeton University, where he majored in architecture and sculpture, he entered a master's program for artists at MIT, providing him free reign to experiment with technology. Janney developed a unique form of environmental and participatory architecture, an immersive art form that relies on sound to transform space. When the New Sound, New York program of performance, dialogue, and sound installations was launched in New York City this spring, Janney, curator and a visiting professor at Cooper Union, spoke to RECORD.

Q: *What inspired you to think that music and architecture could be partners in art?* All music is fundamentally made of rhythm, harmony, and melody. With many of my installations, such as *Harmonic Runway*, an interactive environment of light, sound, and color in the Miami International Airport, I control the harmonic and melodic aspects, but the rhythm is given over to the movement through the particular architectural space. As people move through the 180-foot-long concourse, they trigger photo sensors stationed every 10 feet, which send information to computers that shape the rhythm of the music piped into the space. I want people to experience my pieces, not just see them.

Much of your work exists in urban areas. Why? I feel that cities need humanizing. For example, large urban plazas are often designed to respond to adjacent buildings, but rarely consider the pedestrian. In an effort to bring intimacy and human scale back to the plaza, I designed something called *Sonic Forest*, part of a series of urban musical instruments, a theme that characterizes many of my pieces. It is a series of columns placed on an open plaza to create scale. Sensors, lights, and speakers within each column respond to the passersby.

Has the architecture profession embraced your work? I think architecture embraces my work, but not necessarily the profession; painting the space with sound is not something that falls under the normal purview of architecture. A number of factors in the past 10 years have helped to change that, such as the One Percent for Art Program, where public construction budgets dedicate a percent to art. In private development, however, art is usually the first thing to go. In the end, it comes down to relationships; you resonate with those that understand and appreciate what you do, and they hire you.

Do you find that you use your architectural training in creating art? I am so happy to be trained as an architect! In architecture school, I learned how to convey abstract concepts to a variety of audiences, an invaluable skill in life. Also, sketching and learning CAD have been extremely useful tools. Since my interest is in making music physical, I get information from the concrete world that helps me create; to me, that sensitivity in large part results from being an architect. Someone asked Frank Gehry what he believed an architecture student needed to do to perform architecture, and he said, "read novels," and I totally agree with him. Architecture is a frame of mind, it's about ideas; the profession is about how to translate those ideas into the real world. Recognizing these two distinct aspects and finding how to bring them together is what it's all about.

Photography by Andrew French



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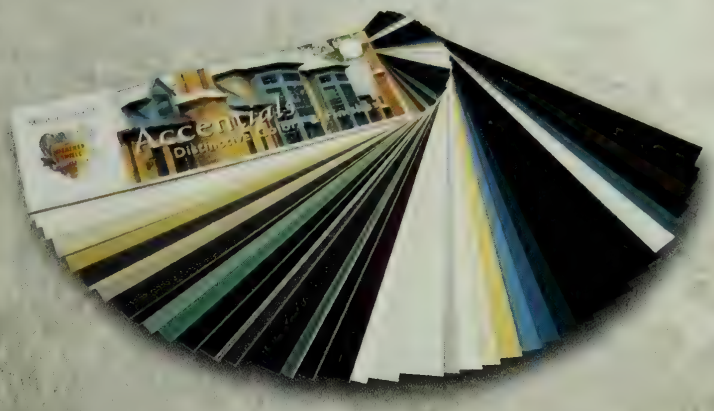
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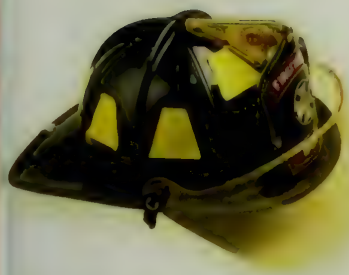
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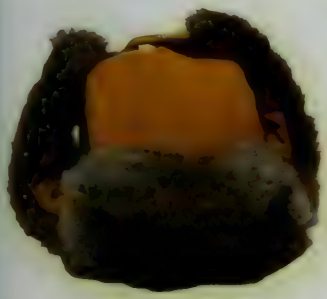
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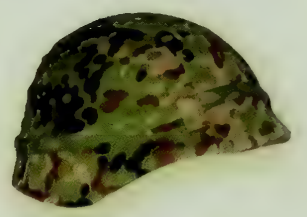
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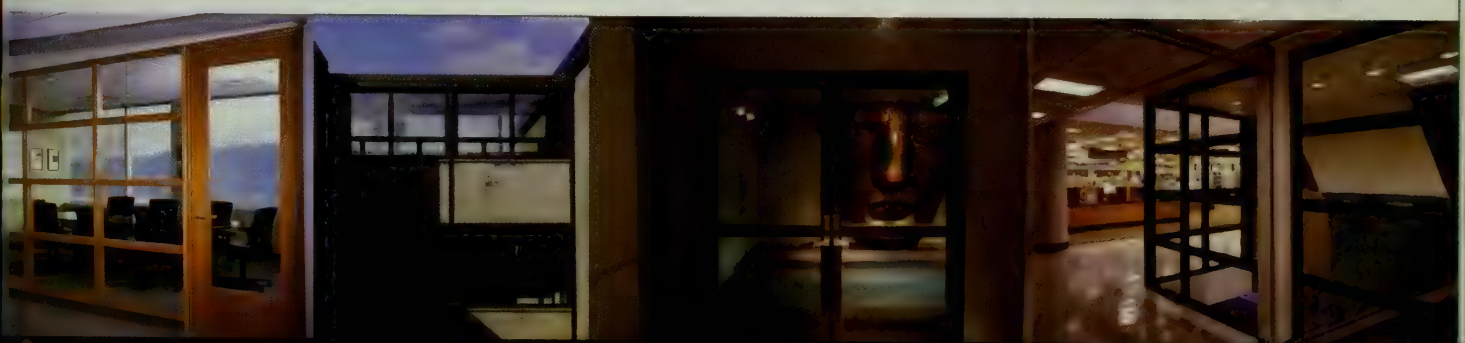
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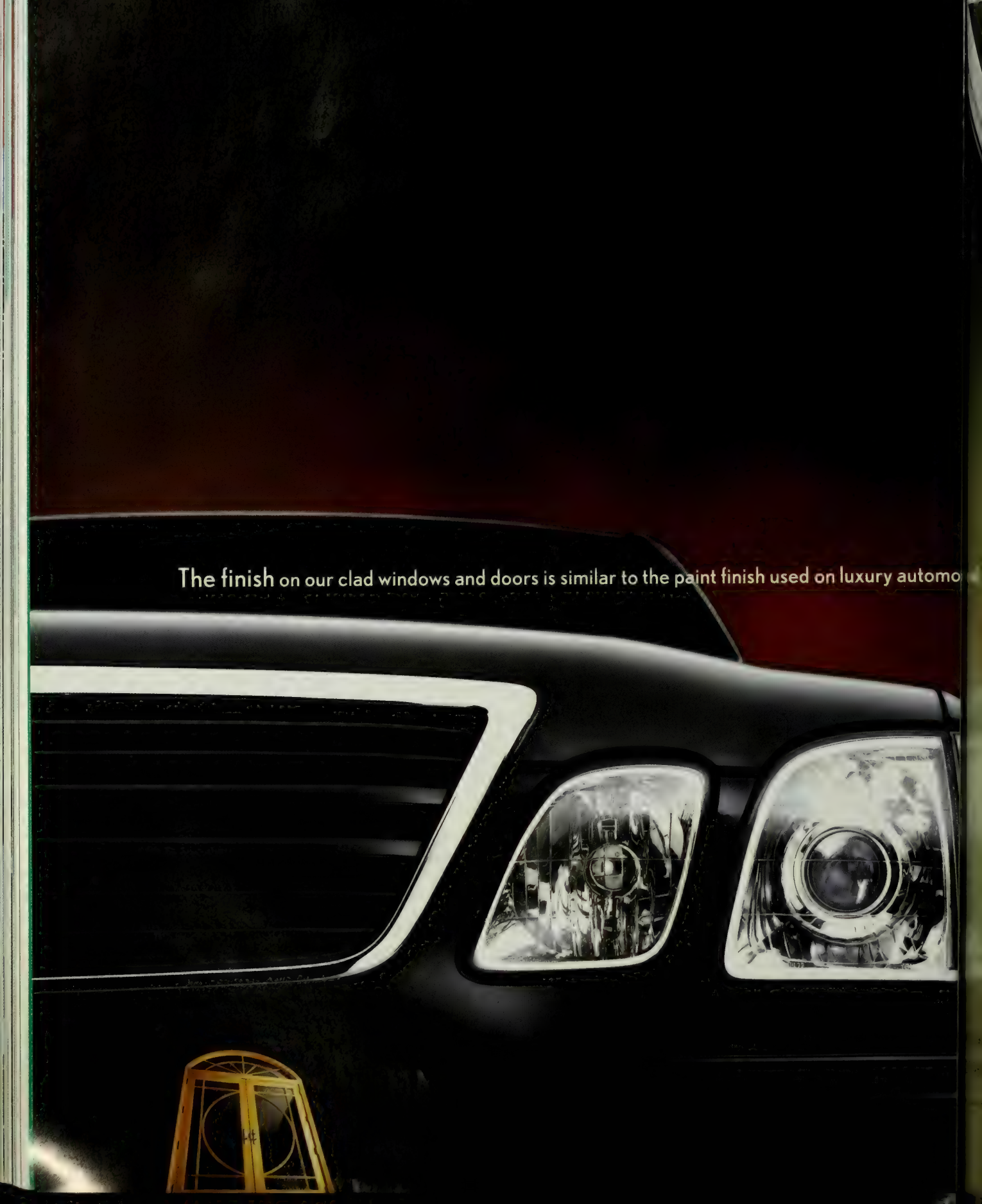
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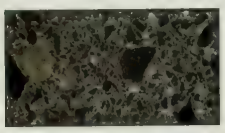
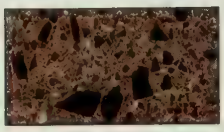
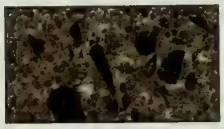
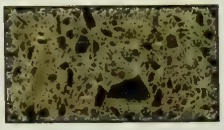
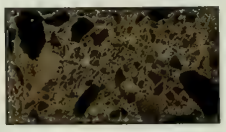
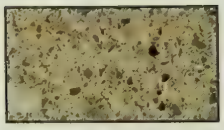
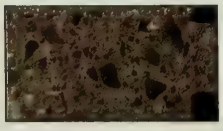
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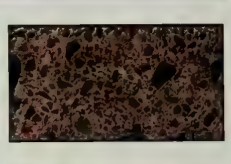
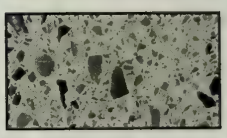
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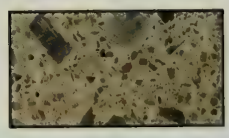
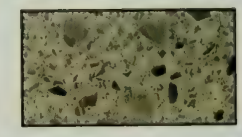
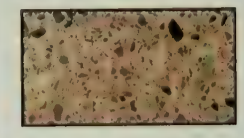
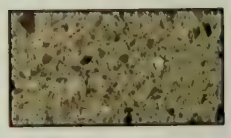
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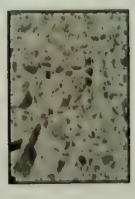
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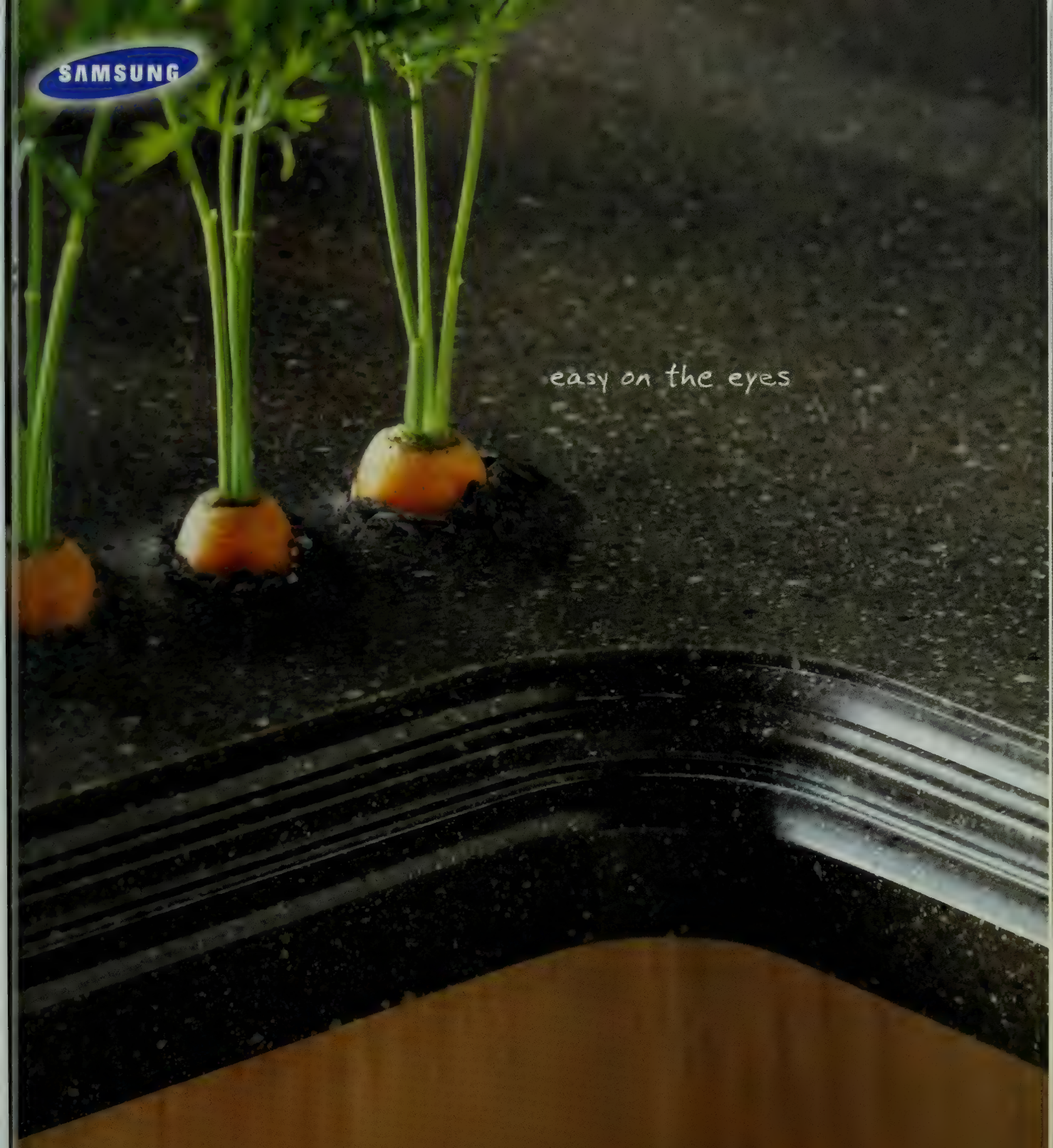






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ARCHITECTURAL RECORD

07.2004



On the Cover: *Seattle Central Library, by OMA and LMN. Photograph by Timothy Hursley Photos*
Right: *Loisium, by Steven Holl. Photograph by Margherita Spiluttini*

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The AIA/ARCHITECTURAL RECORD Continuing-Education Opportunity *is "Defining Component-Based Design" (page 153).*

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ALCAN COMPOSITES



Editorial

By Robert Ivy, FAIA

How could your otherwise fine magazine allow…" Thus begins a lament, an actual complaint about a writer's point of view. We get letters like this all the time from readers who want to tangle with a writer expressing a strong opinion in print. We exult in these arguments, even the hyperbolic ones, since few publications share such a committed, vital constituency as ARCHITECTURAL RECORD. *You always tell us what you think, as if the future of the architectural profession depended on it. In a sense, it does, and we treat your opinions with that same concern.*

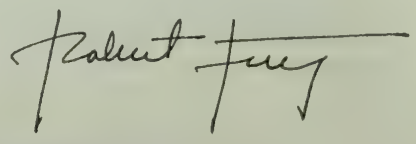
Ironically, the challenge to integrate more critical writing into these pages has come both from our editors and from you, who have continually asked, like Oliver Twist with his porridge, for more. Your desire for a critical voice reflects shared years of academic conditioning, where we regularly face scrutiny (sometimes withering, sometimes cruel, sometimes enlightened) of professors, practitioners, and fellow students. In the design studio and jury, we learned to question and debate, to take nothing for granted. Then at graduation, the clouds parted; suddenly, our clientele seemed too accepting of our work, prompting us to yearn for those tougher early crits. Can't a magazine provide the equivalent of a splash of cold water?

Up to a point. Although you will encounter more of the writer's voice in our pages today, we mete out critical writing judiciously at RECORD. *While the magazine began publication as a critical journal (as in offering evaluation), over time it had broadened its point of view to become a literal record of the world's most relevant ideas and structures. For years, a project's mere inclusion in the magazine implied a positive assessment. After strong internal debate, in recent years we have arrived at a consensus on our approach to different types of reporting: Simply put, categories should be clear.*

Certainly, project stories now often combine straight reporting with points of view. But you, the reader, can expect to know what you are encountering elsewhere in the magazine, whether factual reporting (which characterizes the news, for example), descriptive text, or opinion. Your signals lie in the small, significant headings that precede each story in our departments. Read them. "Editorial," for example, announces the editor's own perspective, speaking for the magazine. "Critique" describes an essay, replete with Michael Sorkin's or Robert Campbell's personality, language, wit, and individual worldview. "Commentary" contains the musings of a qualified staff or outside writer. Those small tabs outside the projects act like road signs—important, but easy to miss.

In addition to clarity, expect balance. If ARCHITECTURAL RECORD *veers heavily toward one extreme, don't panic. Read the accompanying article that tilts the argument from right to left, such as the twin stories we ran about Chicago's Soldier Field in May 2004, in which Joseph Giovannini and Stanley Tigerman took opposing corners. Or look during the following months for an answer to a question raised in an article, a response in a letter or occasionally in another piece. When Michael Sorkin wrote a strongly worded essay on Jerusalem's Museum of Tolerance (which provoked a firestorm of controversy), we agreed to publish a countervailing opinion from the client's perspective that should air in August. Sorkin deserved ink, versed as he is as a professor who has studied the beleaguered city's planning; but we are also making room for the museum's client—a rare case, but an important one.*

Criticism can probe where the camera cannot, since ultimately real buildings (and unbuilt ones, too) are only as good as the ideas underlying them. We need critical writing to sift through the layers—social, environmental, psychological, tectonic, or aesthetic—piercing through the rhetoric, exposing the emperor's new clothes, balancing our praise with understanding, and offering the occasional, bracing splash. In the days to come, you will see more criticism; but remember, you asked for it, and we agreed: It's critical.



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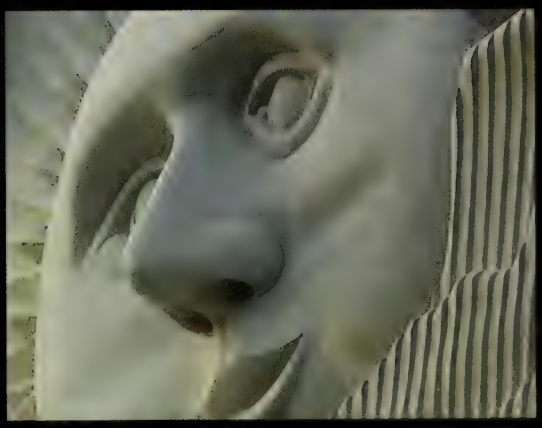
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Letters

Funds for university projects
Thank you for the very well-written and comprehensive article documenting the career of AIA Gold Medalist Sambo Mockbee [June 2004, page 184], including the work of Auburn University's Rural Studio. Regarding the Rural Studio, the impression was left that due to the university's very generous funding (an annual commitment of $400,000) and the fact that communities now help with the cost of projects, that the Studio's financial future is secure. That is not the case. State laws do not allow university funds to be used for project construction costs. Further, community contributions only cover about 20 percent of the actual project costs. Approximately $250,000 must be raised annually from private sources in order to cover total construction costs.

We are in the process of raising an endowment to ensure that there is adequate construction funding into perpetuity. Only then will the future of Sambo's remarkable legacy be secure.
—Daniel D. Bennett, FAIA
Dean, College of Architecture Design + Construction
Auburn University

Why ruin a masterpiece?
I have traveled to Barcelona twice, 30 years apart, to see Gaudí's Sagrada Familia [Correspondent's File, June 2004, page 109]. There is unanimity that this is one of the world's great buildings. Its eight towers originally rose over a low-rise neighborhood. A grand central spire, as yet unfinished, was to grow out of the center to soar over the existing towers and the local community. Until now. The setting of this masterpiece is completely destroyed by the adjacent Agbar Tower, as your photograph on page 110 clearly shows. How any architectural commentator could discuss Barcelona regional planning without an outcry is beyond me.
—Allen Rubenstein
Los Angeles

Keep "her" out of it
I applaud your point of view in the May editorial ["Beyond Style," page 17] for recognizing the offending *New York Times Magazine* article on Pritzker Prize–winning architect Zaha Hadid. Such gender-focused news coverage symbolizes a tenor in our industry that may explain why barely 20 percent of licensed architects in firms are women [News, May 2004, page 25], while in academia 42 percent of graduate architectural students are women (according to NAAB and the *2000–2002 AIA Firm Survey*). As an architect and studio leader with SmithGroup—in addition to being a woman, a wife, and a mother—I add value to the profession, as any individual does. I feel that I have accomplished a great deal in the course of my 20-year career, but I know that troubling perceptions and stereotypes still exist. I chose architecture because of the high ideals of the architects that I studied; I've dreamt of making a difference and feel I've done that. Hadid has realized her dream, and I thank you for insisting that the "her" aspect not overshadow the reason why architect Zaha Hadid has risen to receive our profession's highest honor.
—Anne Belleau-Mills, AIA
Detroit

Keep it coming
I would just like to thank you for helping to create public awareness on the rebuilding of the Twin Towers. I love Ken Gardner's design for the new WTC [News, April 2004, page 32]. Please write more articles on the topic.
—Mike Beggen
New York City

My Toronto has Ryerson U.
I was impressed with the April issue. However, I was disappointed when I came across the Correspondent's File [page 79], which discussed building in Toronto.

The article began by talking about the recent explosion in the construction of public buildings, such as the Royal Ontario Museum addition by Daniel Libeskind, the Art Gallery of Ontario addition by Frank Gehry, and the new Four Seasons Opera House by the firm Diamond and Schmitt.

Two thirds of Toronto's major post-secondary institutions were mentioned, including the new addition to the Ontario College of Art and Design by Will Alsop.

The post-secondary institution that was overlooked, and which I myself attended, was Ryerson University, truly in the heart of downtown. Ryerson is currently undergoing its own great expansion equal to the University of Toronto's. At this moment, Ryerson is building six new buildings—worth approximately $250 million—that will transform the campus. I greatly enjoyed my time in Ryerson's architecture program, and I encourage everyone to visit Ryerson University online at www.ryerson.ca and www.ryerson.ca/build/. Now, everyone can see that Toronto has two world-class architectural universities being designed by leading architects.
—Andrew Robinson
Toronto, Canada

The qualities of architecture
Robert Campbell's division of architecture into the playful and the ethical is curious [Critique, May 2004, page 67]. Vitruvius chose not to divide architecture into camps, but instead assigned three essential and interrelated qualities to it, namely: firmness, commodity, and delight.

"Ethical" strongly suggests both firmness (structure) and commodity (function or usefulness). Campbell's two-part thesis is permissive of present-day design excess and mistakenly confuses *playful* with *delightful*. Critical opinion, based on the classic Wooton/Scott triad, would frown on much that is presently published, where extreme design becomes a role model and spawns "playful" architecture worldwide, ad nauseam.
—James A. Gresham, FAIA
Tucson, Ariz.

Corrections
Due to a production error, the wrong image accompanied the description of Centria's Concept Series, a collection of concealed-fastener exterior metal-wall-panel profiles, on page 369 in the June issue. The correct image appears below. On the same page, the wrong measurement was



given for the Lafarge Ductal components used in the Shawnessy Station project in Calgary, Canada. The project used 24 precast curved canopies, each measuring ¾" thick. In the May issue [page 123], the name of Greg Grunloh, AIA, a project manager for Holabird & Root, the architect of record and structural engineer for the McCormick-Tribune Campus Center, IIT, in Chicago, was misspelled.

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Record News

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Foster and OMA unveil designs in Dallas p. 24
Muschamp leaving the *Times* p. 30
New projects for Hadid, Herzog & DeMeuron, and Nouvel p. 34

AIA Convention draws record numbers to Chicago

This year's AIA Convention, held June 10–12 in Chicago, will be considered a success for many reasons, but perhaps the biggest—literally—was its size. The event attracted a record 22,159 registrants, topping San Diego's in 2003, which drew 20,025. The list of exhibiting companies at cavernous McCormick Place also broke the record, reaching 850.

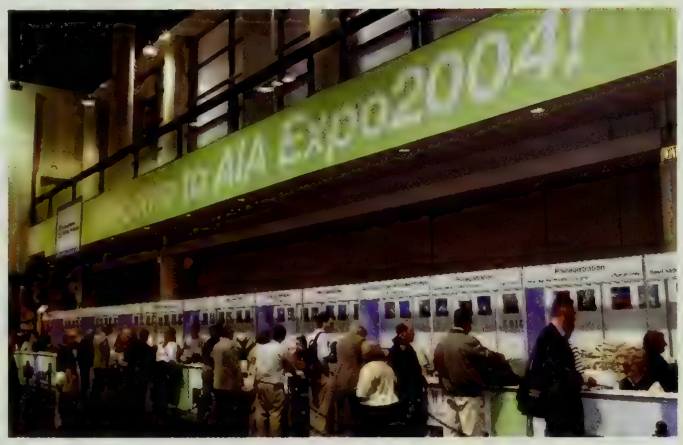
Before the crowd, architect Helmut Jahn and authors Erik Larson and Virginia Postrel offered keynote addresses that captured, respectively, the scope of future projects in the city, the illustrious history of the metropolis's built environment, and the rise of aesthetic consciousness in the country. Throughout the event, speeches, seminars, and continuing-education sessions were filled to capacity, as were most sales booths.

On Friday, Samuel Mockbee and Lake Flato were designated AIA Gold Medalist and Firm of the Year, and the AIA inducted 81 new members into its College of Fellows. The next day, Honor Award winners reviewed their projects, and Kate Schwennsen, FAIA, was elected 2006 AIA president. In other business, delegates adopted a $50 dues increase and a resolution to support research efforts focusing on diversity in the profession.

An emotional highlight came on Thursday night with a screening of Nathaniel Kahn's Oscar-nominated film, *My Architect*. Nearly 2,000 people braved a downpour to gather at the splendidly restored Auditorium Theater by Adler & Sullivan for the event. Kahn received a 90-second standing ovation, preceded that morning by an AIA Presidential Citation. "This takes some of the sting out of not winning the Academy Award," Kahn quipped.



Honorees at the AIA Fellows ceremony.



Participants check into the AIA Expo at Chicago's McCormick Place.

Besides the AIA, the star of the show was Chicago itself. Convention goers could be spotted gawking at skyscrapers on riverboat tours, visiting Frank Lloyd Wright's home and studio in Oak Park, and viewing the upcoming Millennium Park.

"This is a city that takes architecture seriously," said Chicago Mayor Richard Daley as he welcomed the crowd at the opening plenary session. "Our buildings make a statement about Chicago—they're bold, unconventional, and willing to take risks." He also discussed the city's aggressive green-building efforts. All new public buildings in the city are required to be LEED-certified, more than 80 green roofs have been installed on tall buildings, and the city recently opened the Chicago Center for Green Technology, a resource for architects and the public. *Sam Lubell and Deborah Snoonian, P.E.*

Renzo Piano chosen to design Whitney Museum expansion

Reflecting a change in priorities, the Whitney Museum of Art on June 16 chose Italian architect Renzo Piano to design an expansion of its building on East 74th Street in Manhattan. Piano will replace Rem Koolhaas's Office for Metropolitan Architecture (OMA), which had proposed a much more sizable plan, abandoned last year.

The Architecture Selection Committee of the Museum's board picked Piano after a six-month search. The biggest factor, say Whitney officials, was a desire to put more emphasis on viewing art inside than on the view of the building from the street. "We already have a destination," says museum director Adam Weinberg, of the Whitney's iconic 1966 Marcel Breuer edifice. "To my mind, the spectacle should be as much or more about art than architecture." Weinberg adds, "Renzo is incredibly sensitive to the needs of contemporary art and artists. He loves natural light, his interiors have a very human scale, and he has a wonderful sense for details and materials." Design and budget for the project have not yet been set, but museum officials say Piano will work to improve and enlarge gallery spaces, and that he is interested in utilizing (not destroying) nearby historic town houses, perhaps for museum offices. Weinberg says Piano's project may rise above the museum's current height.

Koolhaas's proposal, developed more than two years ago, had a $200 million budget and would have virtually reshaped the building's exterior. It was abandoned about 18 months ago. "I think his plan was spectacular," says Weinberg. "But I think this idea will be more doable in terms of expense, program, and preserving historic landmarks." Piano's replacement of Koolhaas at the Whitney virtually repeats a scenario at the Los Angeles County Museum of Art, which recently replaced a massive plan by Koolhaas/OMA with a more understated, and cost-effective, design by Piano. *S.L.*

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ARCHITECTURAL RECORD is curating the exhibition *Transcending Type* for the U.S. Pavilion at the Venice Architecture Biennale, to be held September 12 to November 7. Participating firms include Kolatan/MacDonald, Reiser + Umemoto, Lewis.Tsurumaki.Lewis, George Yu Architects, Studio/Gang Architects, and Predock_Frane.

The Museum of Modern Art in New York will open its new facility in Midtown Manhattan this November.

Daniel Libeskind has been named the United States Cultural Ambassador for Architecture by the U.S. State Department.

Rafael Viñoly's $875 million Boston Convention and Exhibition Center opened in June. At 1.7 million square feet, it is the largest convention center in New England.

Professor Peter Cook is stepping down as chairman of the Bartlett School of Architecture, University College London.

New York's High Line, which plans to build a public space at the city's old west side rail lines, has named design finalists that include Diller, Scofidio + Renfro; Skidmore, Owings & Merrill; Zaha Hadid Architects; Steven Holl Architects; and Michael Van Valkenburgh Associates.

Landscape architect Charles Jencks has won the $175,000 Gulbenkian Museum of the Year Prize for the Scottish National Gallery of Modern Art in Edinburgh.

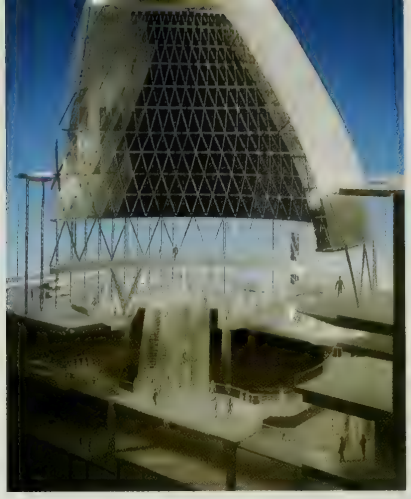
Mohsen Mostafavi, chairman of London's Architectural Association, was named dean of Cornell University's College of Architecture, Art, and Planning.

Design for Fulton Street Transit Hub unveiled

New York City's Metropolitan Transportation Authority (MTA) has released drawings for a new transit hub in Lower Manhattan, to be designed by Grimshaw's New York office. The new building will link stations for nine subway lines, and will stand at the corner of Broadway and Fulton Street, about a block from the site of the World Trade Center.

The building itself is planned as a 50-foot-tall glass pavilion, with a tapering steel-and-glass dome rising from the middle. The design, say its architects, is intended to make the station a neighborhood landmark and bring light into the now-dark subway platforms below ground.

"We wanted to improve the orientation of the facility," says William Wheeler, the MTA's director of special project development and planning. "It's very hard to find, and it's very hard to navigate once you're down there. And light was a big factor. So that directly translated into the solution."



A model of Grimshaw's 50-foot-glass pavilion.

The design incorporates two small stores at street level, and preserves the Corbin Building, an ornate office building from 1889 that sits adjacent to the new subway entrance. Though the pavilion and oculus will be the above-ground face of the new center, much of the new design will be underground. The Fulton Street subway platforms would connect to Santiago Calatrava's proposed PATH station by underground passageway, and changes to the underground station will simplify confusing ramps, add escalators, and increase access to subway platforms.

Existing art in the station will be preserved, though relocated, while James Carpenter Design Associates is developing new art for the station. A team from the MTA stations department is working to incorporate new materials. The architects also collaborated with Daniel Frankfurt, Lee Harris Pomeroy Associates, and staff from the MTA.

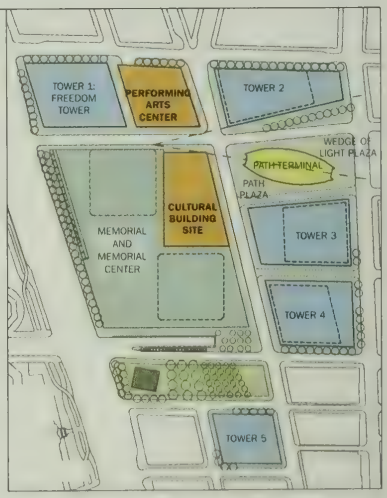
The building is expected to cost $750 million and will be completed in 2007. Funding will come entirely through federal grants. *Kevin Lerner*

Institutions chosen for WTC cultural sites

In a festive presentation on June 10 featuring musicians, dancers, actors, and world luminaries, Lower Manhattan officials named the institutions that will host cultural facilities at the former World Trade Center site.

The winners included the Joyce Theater Foundation, a dance organization; the Signature Theater; the Drawing Center, a visual arts gallery; and the Freedom Center, a new institution dedicated to examining freedom worldwide. Each will be lodged in one of two cultural buildings at the northern end of the Trade Center site, measuring 250,000 square feet apiece. No details about funding or designers have been worked out, said LMDC president Kevin Rampe.

One hundred twelve institutions had expressed interest in hosting space, and some may still find locales near the site, officials said. Mayor Michael Bloomberg noted: "Only in New York would we be able to look in our own backyard and find such a tremendous array of cultural groups to choose from." *S.L.*



The new spaces (in orange) will include cultural and performing arts venues.

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OMA's Wylie Theater will be made mostly of glass.

Dallas unveils designs for performing arts center

After a period in which only two major buildings were constructed in 20 years, the Dallas Arts District is quickly making up for lost time. Following Renzo Piano's Nasher Sculpture Center, which opened last October, on June 8 Foster and Partners and Rem Koolhaas's Office of Metropolitan Architecture (OMA) unveiled preliminary designs for an opera house and theater, centerpieces of the $275 million Dallas Center for the Performing Arts.

The pair of buildings represents a dramatic break with the existing low-slung, limestone aesthetic of the Arts District. The Winspear Opera House will be the district's first primarily glass building, the Wyly Theater its first tower. Both designs aim for visual prominence.



Foster's Winspear Opera House.

The Opera House, a red polished-concrete egg in a curving glass box, will seat 2,200 and cost an estimated $150 million. The main auditorium will form a traditional horseshoe shape and be surrounded by lobbies, promenades, and restaurants. The glass walls will open onto a grand plaza shaded by a floating sunscreen.

"The last thing we want is a cultural ghetto," says Spencer de Grey, lead designer of the Opera House. "We want the influence of both projects to extend through and beyond the entire arts district." Koolhaas and OMA presented an 11-story tower, with a glass-walled theater occupying the lower floors, and offices, rehearsal studios, costume shop, and other support spaces stacked on top. The project is another version of the "vertical city" idea that Koolhaas first introduced in his book *Delirious New York*.

"Height allows a small building to hold its own among larger neighbors," explains project architect Joshua Ramus. "If it were quiet and modest, it wouldn't be the populist building we want."

The stage will be reconfigurable by means of lifts, pulleys, turntables, and other mechanical devices. And as with the opera house, the glass walls will open directly onto a public plaza. Plazas, gardens, and a canopy of trees will link the Foster and Koolhaas buildings, plus a smaller, third theater by Skidmore Owings & Merrill, Chicago.

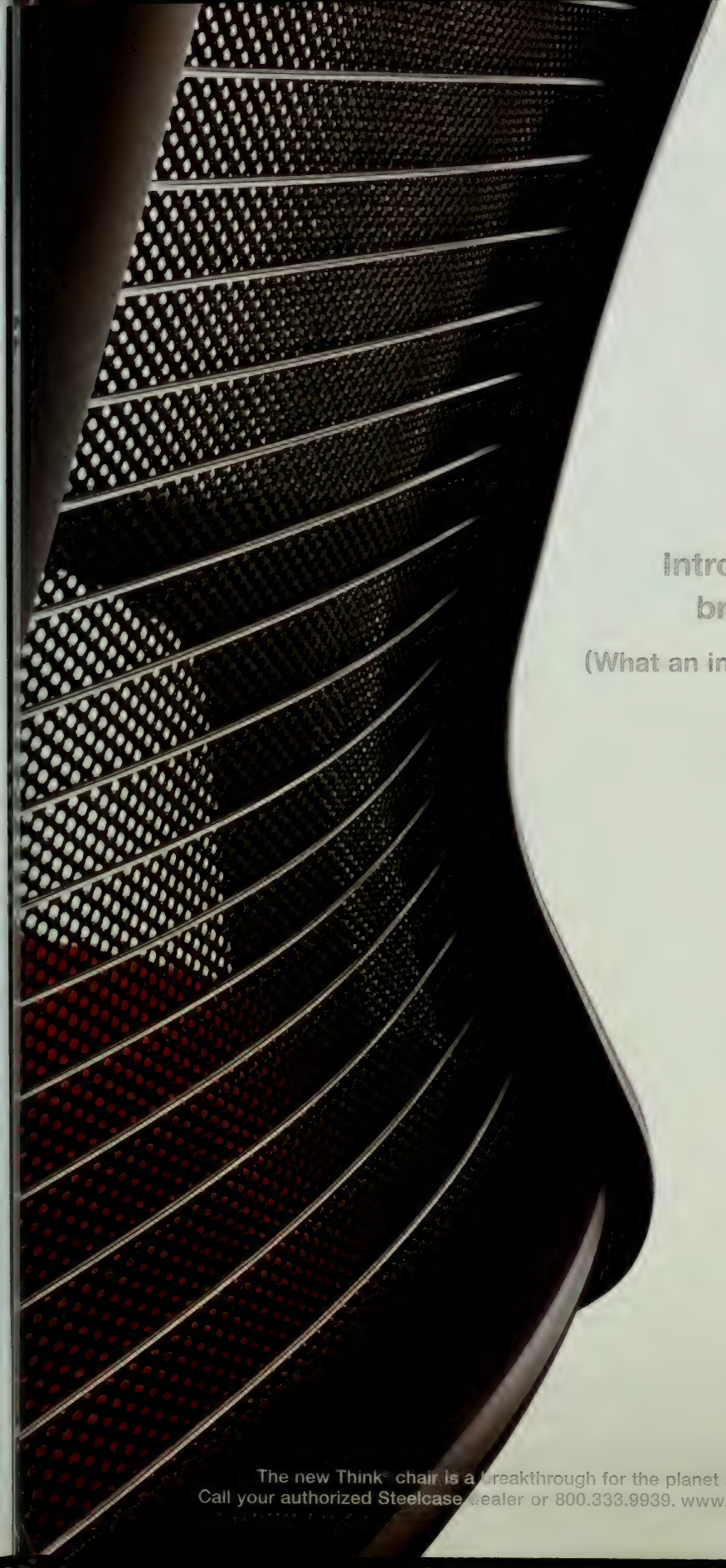
Construction on both projects will begin in 2006, with the entire performing arts center scheduled to open in 2009. *David Dillon*

OMA and Chinese authorities deny demise of CCTV project

Speculation is raging over the future of Office for Metropolitan Architecture (OMA)/Rem Koolhaas's proposed headquarters and national broadcast center for China Central Television (CCTV). The much-publicized scheme calls for a 55-floor angular building on a large and valuable piece of land in the heart of Beijing's new Central Business District at an estimated cost of $730 million.

Many in China regard the project as unrealistic, given its hefty price tag, complex design, and location within the capital's commercial and financial core. Some in China's state council are said to be apprehensive about the scheme, though the council has still given its tacit approval to the project. The Chinese press has been mum on the subject, but Hong Kong's *South China Morning Post* reported that the project had been stalled, hinting that it may have been suspended. Additionally, the Chinese central government recently issued a directive curbing expensive building projects, with the aim to cool down the country's extensive building craze, adding fuel to the rumors about the building's future. However, both CCTV and OMA insist the project is on track.

"I know there's been a lot of high-level political discussion about how China should spend its money, and the gap between rich and poor," says Ole Scheeren, OMA's lead architect on the project, "but I can assure you, [CCTV Headquarters] is by no means dead." *Daniel Elsea*



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Paris Opera completes renovation of its Grand Foyer

Few Paris buildings are as spectacular as the Opera Garnier. A virtual palace, it anchors one of Baron Haussmann's famous radiating urban axes. Surrounded on four sides by traffic-choked roads, the Opera has suffered for its location and had lost most of its patina. In the 1990s, the French government launched an ambitious total restoration to be fazed over 12 years. In 1995, the theater and stage were restored and modernized. In 2000, the newly cleaned entry facade was unveiled, exposing a variety of colored marbles and blinding gold statues. And in May, the Grand Foyer reopened after a $5 million face-lift.

Charles Garnier was relatively unknown when he won the competition in 1861 to build the Opera, which was inaugurated in 1875. As dictated by the original program, the Opera included a foyer where people would not come to sit but to stroll. It was therefore designed to be "as long as possible." Garnier went one step further in making his 195-foot-long foyer accessible to all floors and people of all classes. The grandeur of the space drew some criticism, but Garnier had saved money by using oil paint, with nuances of gold applied only to visible surfaces. He also mass-produced some of the decorative bronze elements, coating reusable molds by electrolysis. While every inch of wall appears carved in gold, the substructure is made up of wood and plaster.



The Opera's renovated Grand Foyer.

The restoration, overseen by France's Service National des Travaux with lead architect Alain Charles Perrot, returns the hall to its original splendor, encompassing ceiling paintings, parquet, mirrors, 7-foot-high statues, marble, drapery, and chandeliers. The job took the work of more than 100 skilled craftsmen in 18 different specialties, and a great deal of research. The fabrics, for example, were reproduced by the factory that first made them and that had kept samples, identified through old receipts.

The final step in the Opera's restoration will focus on the building's perimeter, including lampposts and exterior stairs, as well as the two lateral facades and the cupola. The entire project will be completed by 2007. *Claire Downey*

New Marcus Prize will honor emerging architects

Inspired by the Pritzker Prize, Milwaukee's Marcus Corporation Foundation has announced a new $50,000 Marcus Prize, to be awarded biannually to an emerging architect. Unlike the $100,000 Pritzker Prize, which recognizes an already well-known architect's career or body of work, the Marcus Prize will recognize individual architects earlier in their careers, when they are just on the cusp of greatness.

The Marcus Corporation Foundation will provide an additional $50,000 to the University of Wisconsin-Milwaukee School of Architecture and Urban Planning to administer the prize and bring the recipient to the school as a guest critic. Bob Greenstreet, dean of the school, orchestrated the development of the award with the Marcus Corporation Foundation and the City of Milwaukee.

The Marcus Foundation is the philanthropic arm of the Marcus Corporation, which owns and operates movie theaters, resorts, and hotels, including Baymont Inns and Suites, throughout the United States. Stephen H. Marcus, chair and chief executive officer of the corporation, says, "Our long-term vision for the award is to attract international attention to Milwaukee."

Applications for the initial Marcus Prize will be available in January 2005, and a jury of architects, critics, and members of the Milwaukee community will select the winner in June 2005. The winner is expected to be a guest lecturer and critic in a new graduate-level Marcus Design Studio that will focus on an urban design challenge in Milwaukee.

Visit the University of Wisconsin-Milwaukee Web site at www.uwm.edu/sarup for more information on the Marcus Prize. *John E. Czarnecki, Assoc. AIA*



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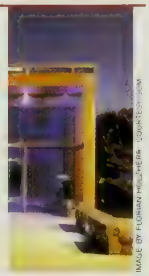
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Record News

Designers develop alternatives to Gehry's Brooklyn plans

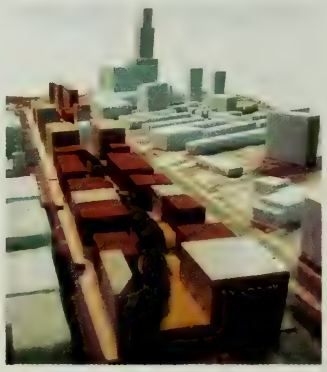
When architect Joel Towers first saw developer Bruce Ratner's proposal for a $2.5 billion Nets arena complex in Brooklyn, he saw one problem: His home was within the site.

Soon afterward, Ratner announced that he would remove buildings in the area through eminent domain, a law that allows the city to condemn property for urban renewal, and Towers quickly began sketching his own plan—one that would preserve his house.

Towers is one of several local architects working on counterproposals to Ratner's plan, designed largely by Frank Gehry, FAIA, that aims to construct a 15,000-seat arena and four soaring residential towers over the Atlantic rail yards in downtown Brooklyn. The new plans vary greatly, but all attempt to prevent the displacement of residents and businesses. "We are working to create a menu of alternatives," says architect Marshall Brown, who is working with district council member Letitia James and a team of neighborhood architects and urban designers.

Towers' first plan, called "Shift," moves the 300,000-square-foot arena onto a platform above the Atlantic Center, just north of the rail yards. New residential buildings would remain in the plan but be horizontally scaled and densely packed to blend with surrounding buildings and preserve existing structures. In January, Towers discussed his proposal with Ratner and Gehry. Gehry liked the platform idea but insisted the arena stay at ground level.

Towers, a partner at SR + T Architects and director of Sustainable Design at Parsons School of Design, then drew up another scheme, called "Swerve," which reconfigures Atlantic Avenue, near the site, to provide more land for the project. He presented the plan at a city council meeting in April that was attended by Ratner.



Brown's plan includes a winding park and a relocated stadium.

Meanwhile, Brown and his team, after meeting with residents in March, offered an option that calls for five- to 10-story buildings, a winding green space, and a reconnection of streets now severed by the rail yards. The plan does not include an arena. Instead, it aims to move it to the Brooklyn Navy Yards, a 300-acre swath of land owned by the city on the East River. Congressman Major Owens also commissioned architect Jennifer Gelin to examine the site. Her proposal links the arena with the 2012 Olympic bid plan, which relies heavily on waterborne transportation.

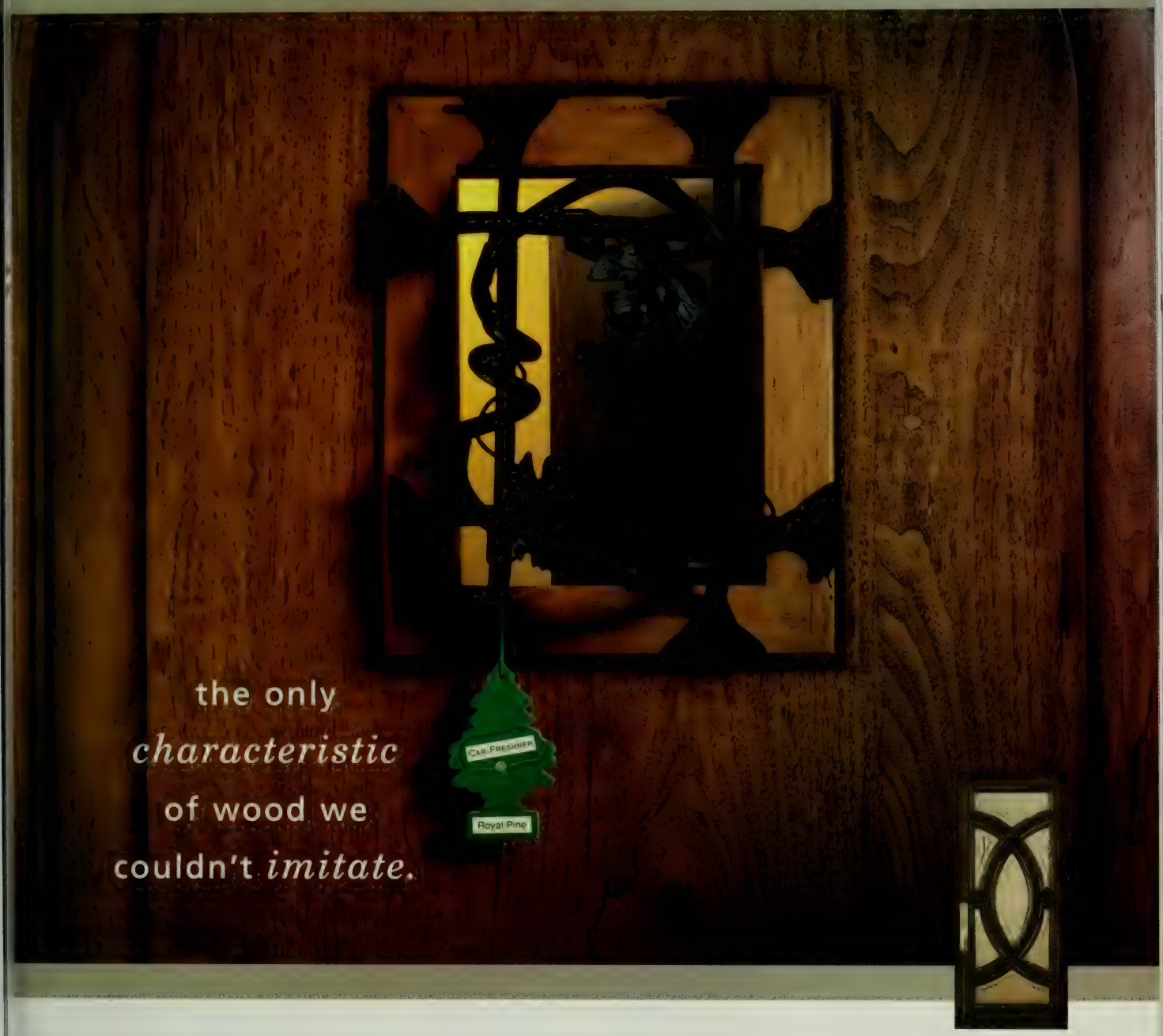
As of now, Ratner has not made any further commitments to review the alternative proposals. However, James Stucky, vice president of Forest City Ratner (FCR), said the company is making every effort not to displace residents. "We will either have to buy the buildings or carve out a space for them," he says. Beth Davidson, an FCR spokesperson, says the company has already gone through 36 sketches in order to minimize the need for condemnation. Still, such plans remain vague at best. *Christina Rogers*

Reed Kroloff named Tulane architecture dean

Reed Kroloff, former editor of *Architecture Magazine*, was recently appointed dean of Tulane University's School of Architecture in New Orleans. His appointment becomes effective October 1. Ron Filson, FAIA, has been serving as interim dean since January.

A recipient of the Rome Prize, Kroloff is completing his residency at the American Academy in Rome. He has held teaching positions at the University of Texas and Arizona State University. He also serves as principal of Reed Kroloff Design Services of New York, which in addition to its own work, serves as consult on architectural competitions worldwide.

"Given his national prominence, varied experiences, and remarkable accomplishments, we are confident Reed will help lead our school of architecture to a new level," says Scott Cowen, Tulane's president, in a statement. One of the nation's oldest architectural programs, Tulane began offering courses in architecture in 1894. ***Tony Illia***



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New York chooses design for potential Olympic Village

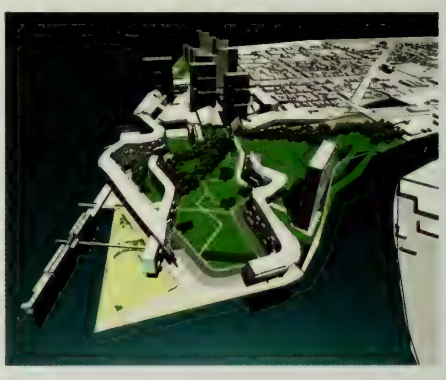
If any architectural commission requires "juice," that burst of breakaway energy on the athletic field, it's Olympic architecture—and juice is exactly what the New York City 2012 Committee got when officials announced in May that Thom Mayne's Morphosis had won an invited competition to design the Olympic Village proposed by the city in its bid to capture the 2012 Games.

The proposed village would be located just opposite the United Nations in Hunters Point, Queens, on a former industrial site bounded on two sides by the East River and Newton Creek. Mayne has made a 43-acre park, designed with landscape architect George Hargreaves, the central organizational feature of a 52-acre complex of mixed-use buildings, 4,500 apartments, and Olympic facilities that, after the games, would convert to market-rate apartments and community facilities.

The park's design includes wind-protective berms and creases, whose fluid spaces are shaped by what are effectively horizontal, undulating skyscrapers. Mayne carefully breaks and elevates the blocks to achieve view corridors to the East River and the Manhattan skyline, while easing the park on a slope down to the Newton Creek, where the design team cultivate an intimate relationship with the water via boardwalks set among abundant vegetation. Along the East River, the design includes docking facilities and a recreational pier, which protects a welcoming beachhead.

The complex's buildings, which strongly recall Corbusier's Unités d'Habitation, reinvent the typology of the continuous apartment block by breaking free of the right angle both in plan and section. Leaning backward and forward as they curve across the site, and mixing in typology, the buildings generate an energy field whose vectors lead north toward a dense urban nexus of apartment towers surrounding an urban square.

Alexander Garvin, NYC2012's director of planning and design, asked the five competing architect teams "for a new kind of plan," he says, "and a new standard for housing." Morphosis's subsequent plan inventively breaks free of precedents, using architecture as an urban design tool to create a highly active, people-centered urbanism.



Morphosis's design breaks free of right angles.

Garvin is sanguine that if the bid for the Olympics fails, the numbers—"If I do my job properly"—will justify building an adapted version of the plan that goes forward on a market basis. Even without the Olympics, Queens West will still have juice. *Joseph Giovannini*

Muschamp leaving post as *Times* architecture critic

New York Times architecture critic Herbert Muschamp will be moving to a new beat, confirms a source within the paper.

Culture Desk editor Jonathan Landman told RECORD that Muschamp decided "he's been doing it long enough, and he wants to do something else." Landman notes that Muschamp's move will be of his own volition, and says that he was not at all displeased with the critic's performance.

"I thought he was a great critic who engaged a lot of people in the subject who never knew they were interested in it. The thing about critics is that some people agree with them, and some don't."

Landman would not say when the move will take place. He added that Muschamp had been thinking of changing assignments for some time, although he could not remember when he and Muschamp had first discussed the topic. The last conversation came the week of June 7, he says.

A source at the *Times* has confirmed that Nicolai Ouroussoff, who is currently the *Los Angeles Times* architecture critic, has been named to take over the position. At press time, it had not been determined when he will assume the new post. *S.L.*



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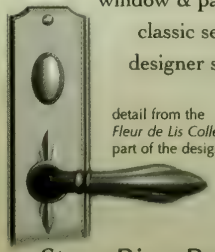






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The plan features a circular boardwalk.

San Diego approves designs to revamp its waterfront

Following the June 8 approval by the San Diego Unified Port District commissioners, a prominent 25-acre section of downtown San Diego's waterfront will be redeveloped with a circular boardwalk, new parkland, and commercial development to reunite a part of the city now blocked from San Diego Bay. The plan was developed by Sasaki Associates/Rob Wellington Quigley, FAIA, which also had the unanimous vote of a four-person competition jury and overwhelming public support.

The commissioners' decision to endorse the proposal marked a change in the port's development strategy, which has been mostly piecemeal and revenue-driven. It also may have quelled contentiousness that developed among residents, businesses, historic preservationists, and the port during several false starts at redeveloping the area over the past eight years.

The Sasaki/Quigley team disregarded competition rules by preserving a historic police headquarters building on the site slated for partial demolition, and by envisioning a grassy, 6.5-acre park that challenged expectations, proposing to dredge old landfill to create an iconic mini harbor encircled by a 3,600-foot-long Arc Walk. Proposed attractions within the arc include a sandy beach, a floating stage, and boat slips. More study is needed to determine if this wide, circular boardwalk will float on pontoons or be designed to double as a breakwater, and how boats will traverse the arc.

Owen Lang, of Sasaki's San Francisco office, had previously led public waterfront planning workshops for the port; he was able to contribute extensive knowledge to help attract residents and tourists to a zone now dominated by high-rise hotels and a mile-long convention center.

"Owen and I agreed to approach the competition as an academic enterprise, regardless of the rules, regardless of the restraints, which made it really fun," says Quigley, who is based in San Diego. Though the proposal will be refined, the cost is estimated at $213 million. The port will soon issue a request for proposals from potential developers. *Ann Jarmusch*

Planning under way for new Toronto waterfront

It is a running joke in Toronto that the city has been trying to improve its waterfront as long as it has had one. But the completion in May of urban design and land-use plans for two new downtown neighborhoods has opened the door for construction to begin as early as 2005.

The "precinct planning," as it has been termed by the Toronto Waterfront Revitalization Corporation, began last year with the selection of Boston-based Koetter Kim and Associates as design lead for the 80-acre East Bayfront neighborhood, and Pittsburgh-based Urban Design Associates as lead for the 90-acre West Donlands areas. Both areas are currently underutilized industrial locations barely a mile from the heart of the city's downtown and adjacent to Lake Ontario.

Koetter Kim's East Bayfront plan envisions the neighborhood as a significant public destination year-round, with an aquarium or winter garden, and housing anchored by a commercial boulevard. The scheme includes varied parcel sizes meant to encourage the involvement of smaller developers. Meanwhile, Urban Design Associates' plan for the West Donlands creates a neighborhood of 6- to 7,000 apartments and town houses organized around a 15-acre, elliptical park. The plan uses a system of laneways and includes innovations such as consolidated underground parking to allow for more efficient infrastructure. High-rise towers will surround the park. ***Andrew Blum***



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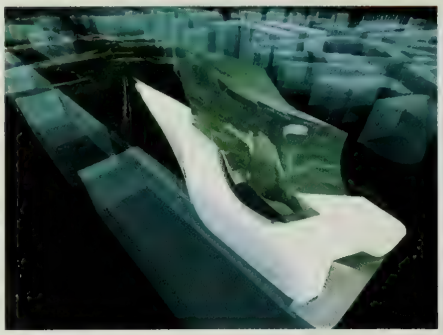


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Hadid's vision extending near Bilbao

On May 10 it was announced that Zaha Hadid won a limited competition to build a new headquarters for EuskoTren, the regional public transit authority of the Basque Region in Spain. The project is located in Durango, a town 20 miles east of Bilbao, and includes a seven-story office tower, the local train station, an underground leisure and commercial center, and a 15-acre park. The headquarters forms the centerpiece of a revitalization effort for this historic town of 26,000 inhabitants, made possible by burying train lines through the site.

Hadid conceived the vault of the station and the office tower as a single, continuously changing organic form, in which the tower acts as a "cannon" shooting natural light into the station platform 30 feet below grade. She describes the commercial center as a "tongue" extending from this form, which is illuminated by openings in the park above it.

Notes Álvaro Amann, counselor for Public Works and Transport of the Basque regional government: "The building resolves the necessities of the new company and establishes a new dialogue between the medieval city and the 21st century." *David Cohn*

Herzog & de Meuron converting warehouse into philharmonic



Swiss-based Herzog & de Meuron is designing a new philharmonic hall for Hamburg, Germany, burgeoning out of an old factory building.

The brick warehouse, called the Kaispeicher A, was built in the 1960s and chiefly stored cocoa beans until its close at the end of the 20th century. The firm says it will make it the "point of departure" for the new hall, which will be stacked on top of it, and connected by a central lobby.

The complex, which will include a 2,400-seat concert hall and a 500-seat chamber hall, will also house a 200-room luxury hotel and 21 luxury apartments.

The addition to the warehouse will be clad with a grid-pattern of three-dimensional square openings, while the future hall's musical vibrations inspire the rising forms of its undulating roof, the firm says.

The facility, along the warehouse docks on the Elbe River, will occupy more than 700,000 square feet, and is a focal point of Hamburg's effort to transform its central harbor. *S.L.*

Nouvel designing marine center in Le Havre, France



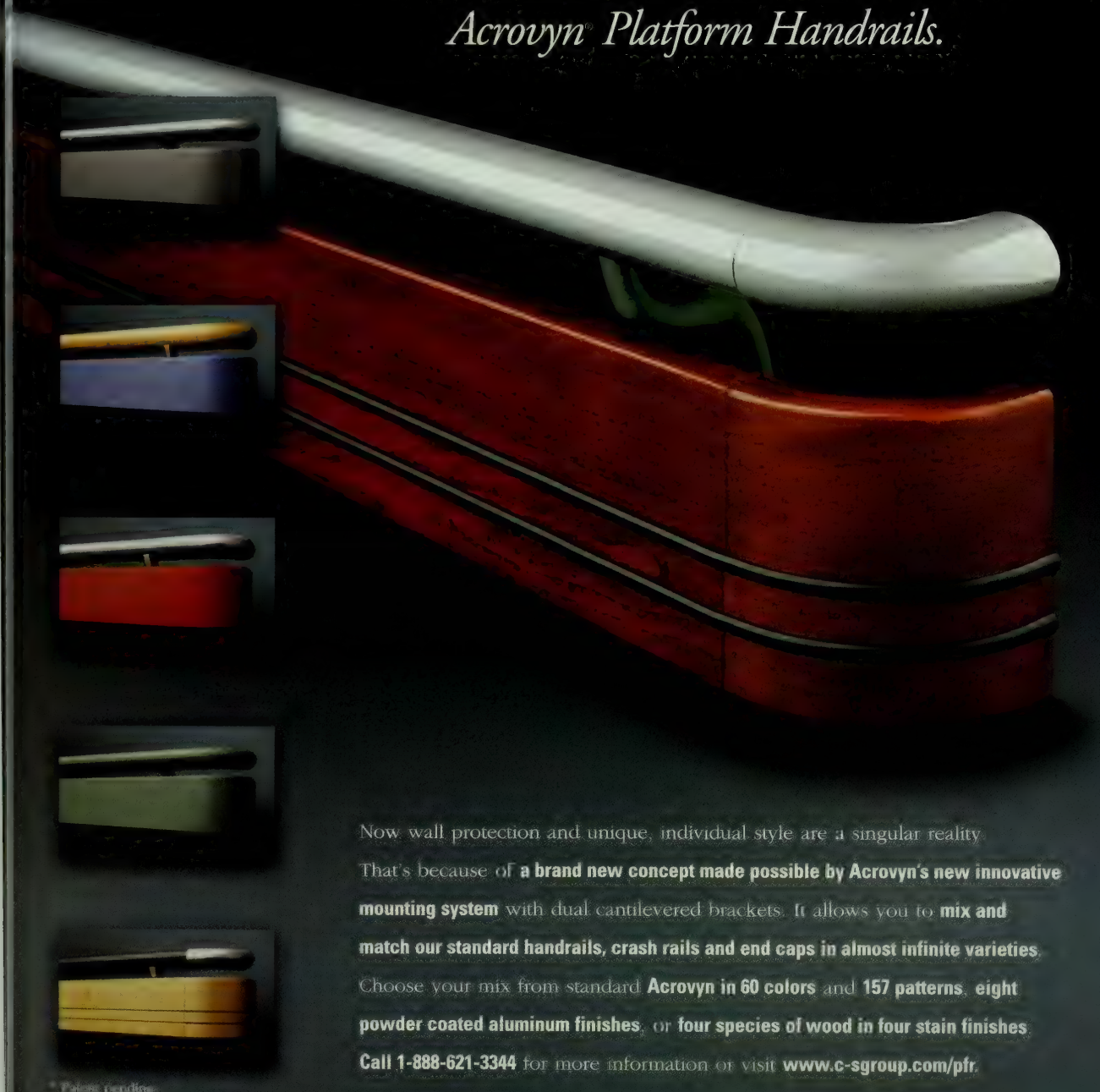
Jean Nouvel last month beat finalists MVRDV and Daniel Libeskind in an open competition to build Le Havre's new Marine Center and swimming pool complex.

The $39 million project is part of a large-scale investment scheme to turn the city's port into a culture, leisure, and shopping quarter. The surrounding industrial aesthetic of the area influenced Nouvel's design, which includes a 394-foot-high glass-and-steel tower. Two cantilevered platforms will house exhibitions on port economy, history, and environment.

Although inspired by the nearby harbor buildings, Nouvel's designs, says project architect Mirco Tardio, will be "more polished" and "adapted to the [cultural and leisure] program." The adjacent 63,507-square-foot swimming pool complex will house two heated pools, a water therapy center, and saunas. The pool complex will be built in concrete, its facade pierced with random openings. The pool complex and Marine Center are tentatively scheduled for completion at the end of 2006 and the end of 2007, respectively. *Robert Such*

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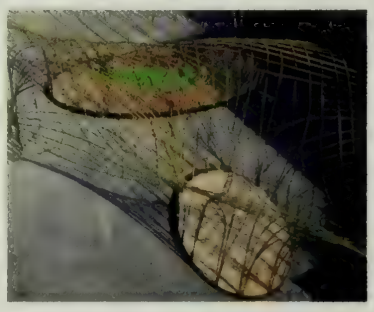
P.S. 1's winning design for a courtyard to help New Yorkers celebrate the summer



nARCHITECTS' plan includes several distinct areas.

The Museum of Modern Art and P.S. 1 Contemporary Art Center in New York have selected a winner for their fifth annual Young Architects Program, to design the summer courtyard installation at P.S. 1 in Long Island City, Queens, New York. Open to emerging architects, the contest challenges participants to propose a design within a $60,000 budget that will serve as the backdrop for *Warm Up*, the popular summer outdoor music series.

New York City–based nARCHITECTS' design, Canopy, was chosen in April, and will open to the public on July 3. The firm, which won the 2001 Architectural League of New York's Young Architects Forum Prize [RECORD, June 2001, page 62], was founded in 1999 by architects Eric Bunge and Mimi Hoang.



The bamboo structure of Canopy.

"In past years, Mimi and I have hung out in the courtyard of P.S. 1 and imagined what we would do," says Bunge. "We imagined a landscape that would engage the full depth of the courtyard. Our planning needed to consider shade, seating, and the definition of spaces. We developed outdoor rooms with different effects that would promote various types of lounging," explains the architect.

These sections include a "rainforest" with overhead sprinklers, a "sand hump" that provides alternative seating, a "fog pad" that utilizes a halo of fog nozzles, and a "pool pad," a wading pool with fresh recycled water, and topography for furniture that creates underwater seating.

During the planning stages and while building on-site, the architects plans have been ever-evolving. "We've found spaces for previously unplanned areas including the 'meeting pad,' a seating area for six people," Bunge explains.

The canopy is built with more than 30,000 linear feet of freshly cut green bamboo that will turn from green to tan by the end of the summer. The architects have used bamboo in past residential projects and have found they like the flexibility of the material as well as its visual and tactile qualities. P.S. 1's executive director, Alanna Heiss, describes Canopy as an "extraordinary bamboo wonderland."

A film crew has been on location documenting the building of the outdoor space with the architects and the building team consisting of architecture students and recent graduates. nARCHITECTS' progress can be followed on their Web site, www.nARCHITECTS.com.

Randi Greenberg

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News Briefs

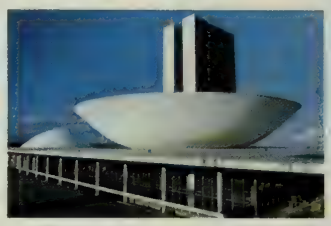
Proposed bills would give tax breaks to architects working abroad Separate bills recently passed in the House and Senate would grant tax relief to architectural and engineering firms working abroad. Each plan is sharply different and the two measures must be reconciled.

The provisions were sought by industry to offset repeal of the Extraterritorial Income (ETI) program, a tax break for companies that operate overseas. The ETI was deemed illegal in 2002 by the World Trade Organization.

The House plan, approved 251 to 178 on June 17, lowers the corporate tax rate for all U.S.-based A/E firms that are set up as C corporations, from 35 percent to 32 percent. The Senate version, passed May 11 on a 92 to 5 vote, uses a 10-year phase-in of tax deductions to achieve the same end for a broader range of corporations. The negotiations between the House and Senate to craft a final bill are expected to be contentious and to last through the summer. Some lobbyists are optimistic a resolution will be reached by September, but if compromises are not attainable, the measure could be shelved until after the election. *Sherie Winston*


Noguchi gets a remake.

Niemeyer wins Praemium Imperiale Brazilian architect Oscar Niemeyer has received Japan's Praemium Imperiale Award for his international impact on the arts. The prize carries a hefty $135,000 honorarium. Niemeyer, still active at age 96, is the oldest recipient of the 16-year-old award, and the first from Latin America. He is best known for implementing Lucio Costa's plans for Brazil's new capital, Brasilia (top photo), in 1958–60, designing most of the city's important buildings. Influenced by Le Corbusier, Niemeyer developed a fluid, sculptural style, using reinforced concrete to create dramatic structures that reflect the natural, flowing curves of his native Rio de Janerio's mountains, beaches, and bay. His most recent project, the Oscar Niemeyer Museum in Curitaba, Brazil, opened to the public in late 2002. *Tony Illia*


Part of Niemeyer's Brasilia project.

Noguchi Museum reopens On June 12 the Noguchi Museum in Long Island City, Queens, New York, reopened after two and a half years of renovation. The museum houses the most wide-ranging collection of Noguchi's work, including sculptures, interior design projects, architectural models, and his famed Akari Light Sculptures, as well as his complete archives.

The $13.5 million renovation, by Sage and Coombe Architects, allowed for the installation of a permanent collection within the museum, and the organization of circulating shows of Noguchi's work. A new space is devoted to public programming and educational events.

The architects strove to maintain Noguchi's aesthetic vision while installing a heating and cooling system throughout the building and renovating the 10 indoor galleries and sculpture garden, and relocating the café and gift shop. The first exhibition, *Isamu Noguchi: Sculptural Design*, a comprehensive look at Noguchi's career, is on display through October 3, 2004. *Audrey Beaton*

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Dates & Events

New & Upcoming Exhibitions

Beyond the Box—The Architecture of William P. Bruder
Los Angeles
July 15–October 14, 2004
An exhibition of Will Bruder's work will be on view at A+D Museum. For more information, call 310/659-2445 or visit www.AplusD.org.

Ongoing Exhibitions

Zaha Hadid
New York City
June–July, 2004
Paintings, drawings, and indoor and outdoor objects by the recent Pritzker Prize–winning architect will be featured at Max Protetch Gallery. Call 212/633-6999 or visit www.maxprotetch.com.

Liquid Stone: New Architecture in Concrete
Washington, D.C.
June 19, 2004–January 23, 2005
A survey of cutting-edge architecture in which the use of concrete is an essential aspect of the design. The exhibition will demonstrate that architects are using concrete to achieve incredibly varied—sometimes even diametrically opposed—aesthetic objectives. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for further information.

Ronan and Erwan Bouroullec
Los Angeles
June 20–October 18, 2004
The first North American exhibition to focus on the work of French designers Ronan and Erwan Bouroullec. The brothers have burst on the international design scene in the past few years with their futuristic furniture, products, and interior designs. At the Museum of Contemporary Art. For information, call 213/621-2766 or visit www.MOCA-LA.org.

The Austrian Phenomenon: Concepts, Experiments—Vienna Graz 1958–1973
Vienna
Through July 12, 2004
The exhibition examines the mid-20th-century Austrian avant-garde and attempts to provide an overview of the conceptual and experimental tendencies that emerged in Vienna and Graz between 1958 and 1973. At Architekturzentrum Wien. Call 431/522-3115 or visit www.azw.at for information.

Material Trends in Modern Italian Furnishings
New York City
Through July 14, 2004
The region of Lombardy is the center of Italian design ingenuity, with unparalleled excellence in creativity and manufacturing values. This exhibition features recent products in furniture, textiles, consumer electronics, and fixtures. The show coincides with the 16th Annual International Contemporary Furniture Fair. At Material ConneXion. Call 212/842-2050 or visit www.MaterialConneXion.com.

Modern Means: Continuity and Change in Art, 1880 to the Present
Tokyo
Through August 1, 2004
A landmark survey of more than 300 works of architecture, design, painting, sculpture, drawing, prints, photography, and electronic media selected from the extensive collection of the Museum of Modern Art in New York. The exhibition explores the blurred relationship between "Modern" and "Contemporary" to establish an effective narrative between past and present. At the Mori Art Museum. Visit www.mori.art.museum.

Affordable Housing: Designing an American Asset
Washington, D.C.
Through August 8, 2004
This exhibition demonstrates that low-cost housing need not be of low quality and explores the potentially far-reaching benefits of good design for residents and their broader communities. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Jorn Utzon: The Architect's Universe
Humlebaek, Denmark
Through August 29, 2004
This is a show illustrating Utzon's working method—his process—focusing both on the work and its sources of inspiration. At Louisiana. Call 45/4919-0719 or visit www.louisiana.dk.

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Dates & Events

SouthwestNET: PHX/LA
Scottsdale, Ariz.
Through September 5, 2004
An exhibition of recent works by six emerging artists from Phoenix and Los Angeles. Although separated geographically, these artists explore similar issues related to the Southwest's unique version of urbanism, from its ubiquitous Postmodern architecture to the impact of suburban sprawl on the desert environment. At the Scottsdale Museum of Contemporary Art (SMoCA). Call 480/994-2787 or visit www.smoca.org for information.

Samuel Mockbee and the Rural Studio: Community Architecture
Washington, D.C.
Through September 6, 2004
Both a practical program for educating future architects and a vital force for improving living conditions in one of the nation's poorest regions, Auburn University's Rural Studio began with the drive and vision of Samuel Mockbee (1944–2001), who was posthumously awarded the 2004 AIA Gold Medal. The exhibition includes both models and photographs of the projects, as well as a number of Mockbee's paintings and sketchbooks from the Rural Studio. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for further information.

Solos: Future Shack
New York City
Through October 10, 2004
Architecture for Humanity's Future Shack is a shelter that can be constructed anywhere, very quickly, to address the needs of refugees as well as of victims of natural disasters. Designed by Australian architect Sean Godsell, the prototype has been built in the Cooper Hewitt's Arthur Ross Terrace and Garden as part of the summer Solos series. At the Cooper-Hewitt, National Design Museum. For further information, call 212/849-8400 or visit www.cooperhewitt.org.

Aerospace Design: The Art of Engineering from NASA's Aeronautical Research
Washington, D.C.
Through December 5, 2004
The exhibition features more than 65 artifacts from NASA's collection, including wind tunnel models and designs for conceptual airplanes. At the Octagon. Call 202/638-3221 or visit www.theoctagon.org.

Lectures, Conferences, Symposia

Mount Joy, Pennsylvania: Small Town Main Street with a Smart Growth Future
Washington, D.C.
July 8, 2004
Terry Kauffman, Mount Joy's borough manager, will describe how a small town can reach economic development and community goals through smart growth strategies. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Sasaki Associates: Designing the Civic Realm
Washington, D.C.
July 8, 2004
Over 50 years ago, Hideo Sasaki began his planning and landscape architecture practice with a set of basic beliefs: respect for the larger context; appreciation for simplicity, restraint, proportion and permanence; and a belief in collaborative practice. Dennis Pieprz, president of the firm, will present a range of international architectural, urban, and landscape projects, including the design for the 2008 Beijing Olympics, the Schuylkill Gateway district in Philadelphia, and the design expansion plan for Ho Chi Minh City, Vietnam. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Preston Condominiums and Townhouses
Washington, D.C.
July 10, 2004
Kathryn Krum of the architecture firm Cooper Carry and James Doll of Corinthian Contractors will lead a tour of this 134,000-square-foot project, scheduled for a two-phase completion in 2004 and 2005. Call the National Building Museum at 202/272-2448 or visit www.nbm.org for more information.

Sea Ranch: An Early Story of Ecology and Design
Washington, D.C.
July 12, 2004
The ecologically inspired planning and architecture of The Sea Ranch in northern California caused a quiet revolution in architecture. Donlyn Lyndon, a founding partner of MLTW, which designed one of the first buildings at Sea Ranch, will speak about the importance of the development and impact on architecture. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.



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Dates & Events

Roger Duffy: SOM
Washington, D.C.
July 22, 2004
Duffy, a design partner at Skidmore, Owings & Merrill, will discuss his efforts to challenge the status quo of the well-established firm, the *SOM Journal*, and encouragement of collaboration among the firm's architects and planners, as well as his own design work. At the National Design Museum. Call 202/272-2448 or visit www.nbm.org.

President Lincoln and Soldiers' Home National Monument
Washington, D.C.
July 24, 2004
This monument is currently undergoing a $1.7 million exterior restoration to return the Gothic Revival–style cottage, centerpiece of the Monument, to its appearance during the Civil War era, when Lincoln used it as a summer retreat. National Trust for Historic Preservation project manager Sophia Lynn, preservation projects manager David Overholt, and Hillier Architecture's George Skarmeas will lead a tour of the project. Call the National Building Museum at 202/272-2448 or visit www.nbm.org.

2004 SMPS/PSMA National Conference
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This conference is the leading forum for business development, marketing, and firm management for the A/E/C industry. This year's conference focuses on helping firms build business in tough economic times. At the New York Marriott Marquis. Visit www.buildbusiness.org.

Houston Mod: Leo Marmol
Houston
August 19, 2004
Leo Marmol, AIA, managing principal of Marmol Radziner + Associates of Los Angeles, will be the second annual speaker of the Houston Mod August lecture. His firm is responsible for the restoration of Richard Neutra's Kaufmann House in Palm Springs and has been recognized in many national publications. At the MFAH Brown Auditorium. Visit www.marmol-radziner.com or www.houstonmod.org.

ARMA 2004 Summer Meeting
Kansas City, Mo.
August 24–26, 2004
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Competitions

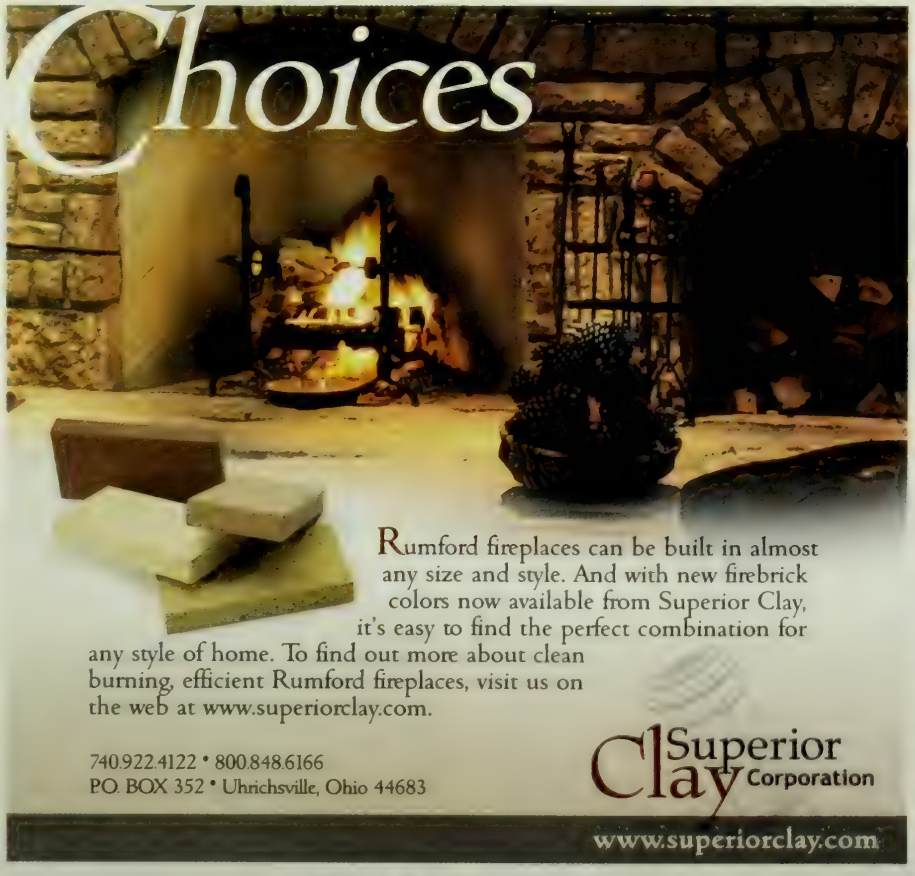
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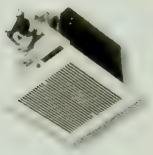


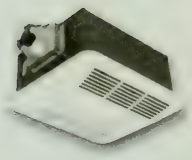
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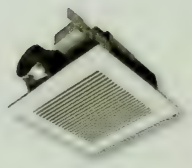
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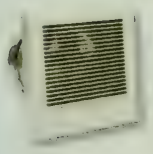


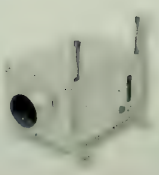












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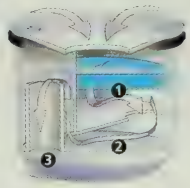
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What's happening out West? This month, archrecord2 delves into the work of some designers on the Pacific Coast. In Design, we examine Seattle's PLACE Architects, whose work has led them into the realms of residential, retail, and community spaces. In Live, we invite you into the Los Angeles home of architect Fritz Haeg to find out how he brings people together to celebrate the arts. Learn more by visiting architecturalrecord.com/archrecord2.

DESIGN

Building spaces and making places



"Place is what I do. Making places and valuing spaces is the whole idea," says Heather Johnston as she explains the inception of her firm and its name, PLACE Architects. Founded in 1999 and based in Seattle, PLACE has established a reputation for itself by adopting what Johnston refers to as a high-tech-meets-industrial aesthetic. This notion goes hand in hand with the architect's desire to create a diverse practice: "By taking on projects in commercial, residential, and industrial realms, we borrow detailing and materials from one project type and put them to use in another."

Johnston likes to give a name to each project during its planning stage. "Since the spaces we collectively build with our clients will inevitably have emotional ties," she says, "by naming the space, you give it its own identity and you automatically have a platform for more ideas." Take, for instance, the live/work space, DIVA. Inspired by the 1983 French thriller of the same name, this residence consists of the elements the client liked best in the film. "There are two primary locations in the movie—one is a space splashed with bright colors, the other is a sleek, stark Modern loft. The client liked both of these opposing images, so we combined them in the house while also making a space that could change and adapt to the client's needs." The highly flexible design enables the owner to use the building not only as a home; components of the structure also provide space for car restorations, photo shoots, a gallery, and an intimate meeting area.

Johnston's credo as an architect is, she says, "Weave and knit the community while making people's lives better piece by piece." She enjoys working on projects that address not only how people live but also how they get around. PLACE has been working closely with the Puget Sound Regional Council on projects involving design and transit. Following feasibility studies for the Council's Bike + Ride Program, the firm was awarded the contract to design bike stations as well as the program's graphic identity. The stations,





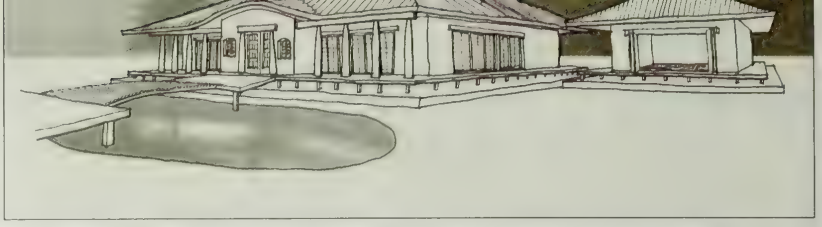
DIVA, Seattle, 2002

Divided into four components—the vault, the bar, the stair tower, and the roof—this live/work space accommodates the varying needs of the client. Considering the client's interest in car restoration, overhead doors placed at both ends of the house provide vehicular access, ventilation, and outdoor views.

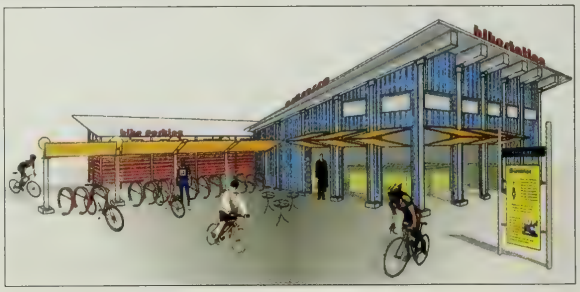
already widely used in Europe and Asia, are facilities where those who commute by bike can park, clean up, and emerge ready for work. Johnston, an avid bike rider herself, sees these stations as the next step toward clean air and easy mobility, as well as a safe social space where riders can relax and intermingle.

One look at PLACE's client list and you cannot help but notice the diversity of a project roster that includes the Seattle Monorail Project, a video production studio, senior homes, and a Zen temple. Given Johnston's enthusiasm and energy, it comes as no surprise that so many of PLACE's projects stem from her personal contacts. For instance, the client for DIVA was a blind date; the idea for the Zen temple came from a friend of her yoga teacher. When trying to account for PLACE's growth and varied clientele in the past two years, the architect credits simply following her passion: "I believe if you do what you love, things are just going to work out. I'm enthusiastic about my work. I really think that I'm doing something important—so I talk about it with everyone. A lot."
Randi Greenberg

For more photos and projects by PLACE, go to *architecturalrecord.com/archrecord2*



Soto Zen Temple, Seattle, concept design, 2001
A practitioner of the faith cited a need for ritual and sacred space for Japanese Buddhists. After much research, PLACE created plans for a temple to "create an oasis in the city."



Bike station prototype, Puget Sound Regional Council, concept designs, 2002
PLACE evaluated sites along the existing commuter rail lines for bike stations. Simple to construct, the structures could be assembled with recycled and sustainable materials.

LIVE

Sparking creativity at Sundown



At a recent salon, "knitknit" attendees showed items they made and brought projects to work on.

Fritz Haeg knew at a young age that he would become an architect. He believes this self-assurance is in part the reason he is now involved in so many other artistic ventures. "I feel my role has expanded, and I'm confident enough to do other things," the architect explains. Haeg can boast credentials as architect, environmental designer, artist, teacher, and now curator of Sundown Salon, a regular gathering of his friends, clients, and students for a free exchange of ideas, art, and performance.



The setting for Sundown Salon.

Five years ago, Haeg moved from New York City to Los Angeles. "You can't move to L.A. without suddenly being aware of three major issues—community, art, and ecology. These issues feed off each other instead of competing with one another," he states. With the purchase of his home three years ago and a desire to bring together like-minded people who could look at innovative works being done outside the commercial realm, Haeg became founder and host of Sundown Salon.

This salon encompasses all types of art, including music, design, and dance. The theme changes for each gathering and is usually spawned by a regular attendee. Past themes have included radical gardening, knitting, and "lights, music, magic."

The architect's home, a 1980s-era geodesic dome, is a perfect venue for these events. The subterranean part of the house, "the cave," caters to live performances; there are art installations in the dome; and Haeg's extensive garden is also the setting for many of the evenings' activities.

This fall, Sundown Salon and the MAK Center will present a three-month program at the Schindler House exploring the life cycle of garments. Artists and designers will illustrate how fashion is designed, produced, and presented through workshops, lectures, and performances. *R.G.*

For more information on Sundown Salon and other ventures by Fritz Haeg, go to *architecturalrecord.com/archrecord2.*

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Despite some rough edges, Athens should (just about) be ready for the Olympics, as a city transformed

Correspondent's File

By Sam Lubell

At the upcoming Athens 2004 Olympics, which begin August 13, Marathon runners will trace the legendary route taken in 490 B.C. by a herald from the small town of Marathonas, in Northeast Attica, to Athens, where he announced the Athenian victory over the Persians. In modern athletic competition, it doesn't get much more exciting than this.

But to one driving the circuitous route in early June, it was evident that construction had not moved along as smoothly as one might have expected. Miles of the road—which authorities recently decided to widen—were in ruins, with pipes projecting in all directions and piles of dirt, rock, and concrete scattered where streets and sidewalks should have been. Huge pits loomed 10 feet below the ground. Of any project in the Olympics, this one may be the furthest from being ready. But it's not the only one. Workers around the country are laboring in droves at the last minute to finish what has been referred to by many as the most down-to-the-wire Olympics in history.

While there is some embarrassment about the now-infamous rush job, most in Athens don't really seem to care. With a few notable exceptions, and despite some rough edges, it looks like they will pull it off, and most people have an unwavering faith that they will. They also bask in the knowledge that the city will come away with a radically revamped infrastructure, much of which had been planned earlier but was accelerated for completion in time for the games. Improvements include impressive new stadiums, but also a new airport, rehabilitated buildings and squares, a new metro system, new highways, and dozens of renovated hotels and museums.



1. *Olympic Sports Complex*
2. *Olympic Village*
3. *Marathon start*
4. *Panathinaiko Stadium*
5. *Helliniko Olympic Complex*
6. *Faliro Coastal Zone Complex*
7. *Parthenon/Acropolis*

Locals have absolutely no doubt that the work will get finished. This sentiment is echoed passionately by everyone from the city's mayor, Dora Bakoyannis, to every waiter, store owner, athlete, bus driver, construction worker, and pedestrian approached on the streets of the frenetic metropolis.



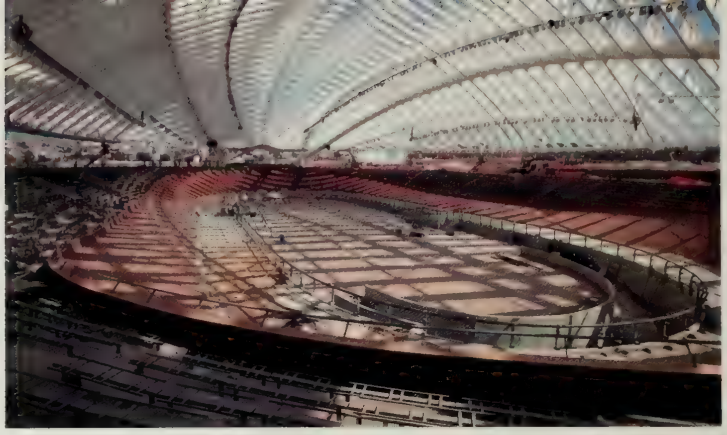


The roof wings of the Olympic Stadium (above) were moved into place in June. The Parthenon (below right) is getting a face-lift, but maybe not in time.

Not to say the process has not been trying. After the land of the first games was awarded the modern Olympics in 1997, it responded by doing next-to-nothing for the following three years. This inaction, it appears, resulted from an unwieldy combination of disorganization, miscalculation, arrogance, political infighting, entrenched bureaucracy, the unearthing of ancient artifacts at venue sites, and, not least, the long-established Greek tradition of procrastination and last-minute work.

"We've done everything last minute for the past 2,000 years," one restaurant owner explained about his country, which is struggling to get over its old habits and fit into the new European order. "It's a strange place," notes Bernard Tschumi, who is designing the New Acropolis Museum, at the foot of the Parthenon. His project was supposed to be finished in time for the Olympics, but thanks mostly to political arguments over its threat to ancient landmarks, it is now just a giant hole in the ground next to concrete bases. When asked when the museum would be completed, Tschumi refused to answer. "I know how long it *should* take, but how long it's *going* to take to get done here is a different story."

After threats from the International Olympic Committee,



The Olympic Velodrome (interior view, above) is nearly complete.

which in 2000 warned that it might move the games if progress wasn't made quickly, the Athens 2004 Olympic Organizing Committee (IOC) and the Greek government, both under new leadership, finally got things moving.

The good news is that most buildings have been or are close to being completed. The biggest symbol of success came when the first roof wing of Santiago Calatrava's Olympic Stadium, part of his Athens Olympic Sports Complex and long the primary concern of the Olympics officials, began its hydraulic-powered slide into place on massive steel tracks. Says Simon Scheller, project manager for the Sports Complex, "We knew at that point we were over the hump. We saw it would work. It was a huge relief." Besides the main stadium, which at this writing still has one more wing to go and no seats installed, most stadiums at least have their structures intact and have been tested with major sporting events. The Olympic Stadium held the Greek National Championships from June 10 to 12.



Braces supported the Karaiskaki Stadium in June.

The bad news is that as of early June several venues were still not complete, with little time left for systems and security checks, while most surrounding landscapes and infrastructure were still unfinished. Besides the mess at the Marathon, piles of debris, concrete, wires, and building materials still littered most structures and sites. One pile, near the Sports Pavilion, a new stadium at the Faliro Coastal Complex near the coast, to be used for taekwondo and handball, seemed to be about 50 feet high.

Unfinished projects included the stretch of highway linking the Olympic Village to the city, the tram intended to connect areas along Athens's western waterfront, and the converted Karaiskaki Stadium, which will host Women's Soccer—it was braced with massive supports and covered by an incomplete canopy. Meanwhile, a planned roof for the Olympic Aquatic Center was recently scrapped because of time issues, forcing spectators and athletes to bake in the legendary Hellenic summer sun.

Still, Scheller explains, there is order in the especially messy chaos of Greek building. "If someone were to come to this site for the first time, they would have a heart attack," he says of the Olympic Sports Complex. "But when you know what's going on, it makes more sense," he says.

He describes Greek building officials' sense of timing as a matter of waiting and waiting, and then sending every possible resource until something gets done. In the case of the Olympic complex, Calatrava's firm wasn't commissioned until summer 2001, followed by a short design period and a longer period of waiting for contractors to be tendered offers by the Greek government. Construction didn't start until March 2003. But when work began, the contractors supplied more than 1,000 workers from all over the world. In covering the roof of the next-door Olympic Velodrome, Scheller says, authorities employed 25 trucks and hundreds of workers laboring 24 hours a day. The process was completed in one week. He likens such techniques to a popular Greek dance, in which dancers start extremely slowly, and then work themselves into a fevered pitch. "It's different than in other places, but you can't change the way they work," he says. "The system is in place." Adds Mayor Bakoyannis: "We start slow, but we finish well."

While admitting that the government lagged up-front on most projects, Olympic committee president Gianna Angelopoulos-Daskalaki argues that projects of this magnitude are almost invariably finished at the last possible minute. Scheller adds that at the Barcelona Games in 1992 (to which Calatrava's office also contributed) trees were being planted the night before. Several construction experts have concurred that most Olympic projects have come down to the wire, while a cab driver—racing to get to the airport on time—points out that Montreal's stadium was never finished, but Athens's will be. He laments that the world's press pick on the Greeks because they need something to write about.

"Why is everyone so worried?" says Mayor Bakoyannis. "We will be ready. Why should we be ready a year before?"

Yet this work style, which has cut things close even compared to its last-minute predecessors, still brings a cost. Several workers have been killed on the sped-up construction projects, although Bakoyannis says the rate of injuries has not been any higher than the average for European construction projects. Late-work fees haven't helped the budget, which has soared $1 billion beyond projections. Meanwhile, the immense amount of last-minute manpower makes tracking security threats at the stadiums much more difficult. (Security is heavy at the sites, but not perfect. Despite some run-ins with police, I was able to get a good look at many sites where I didn't have official access). Bakoyannis says that the stadiums will be "cleaned" by security crews upon completion, using X-rays, metal detectors, and other technology—meaning any threats will be neutralized.

Meanwhile, the timing has left



In early June, much of the Marathon route still lay in ruins.



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The new Athens subway displays ancient artifacts found during construction.

the IOC flustered, to say the least. President Jacques Rogges told the Associated Press in March, "All our experts are saying now that there is still enough time to finish everything for the opening ceremony." Later, however, Gilbert Felli, executive director of the Olympic Games, sounded bitter: "The Greeks didn't understand how big the Olympics were and the amount of work that needed to be done. In the future, we will be stricter toward cities bidding to host the games."

Regardless of the struggle, what most of those outside of Athens—who are obsessed by Greek tardiness—have overlooked, but won't be able to for long, is that many projects display elements of splendor. Calatrava's Olympic Sports Complex is likely to be one of the most breathtaking large-scale projects in recent memory. The complex (which includes the Olympic Stadium, the Olympic Velodrome, the tennis and swim centers, an indoor arena for basketball and rhythmic gymnastics, and large pedestrian spaces) is massive in every sense of the word, measuring 10.7 million square feet. Each wing of the Olympic Stadium roof weighs 9,000 tons and spans 1,000 feet. Yet the schemes, dominated by white exposed steel, have harmony, rhythm, grace, and most of all, lightness, enveloping visitors with a soaring sense of awe (read Milwaukee Art Museum times 50). Standing inside the stadium, one is mesmerized by the gigantic, gently sloping roof wings, pointing the eye to the nearby mountains and echoing their shape. Calatrava explains that they are literally designed as suspension bridges over the expanse of the stadium. He modeled them after a bridge he built in Bilbao.

Walking to the Velodrome, one sees a more compact version of a similar theme. Yet at this size, it packs perhaps an even more potent punch. The complex's grand promenades (many made of white marble), meanwhile, are both well-proportioned and graceful. Long avenues stretch away from different sites, while sleek landmarks along the way lend visual (and experiential) highlights to a visit. The "Agora," made of bending white steel arches, is the most important of these, and will function both as an elegant thoroughfare and a much-needed cooling center, surrounded by trees and misting fountains. Meanwhile, the Nations' Wall will be a central entertainment center. It features 1,000 metal beams linked to motors that move individually in cascading order, creating a wavelike effect.

Other projects are also impressive, even by Olympic standards. The steel-clad tennis stadium has a sleek circular design that looks from above not unlike a shiny compact



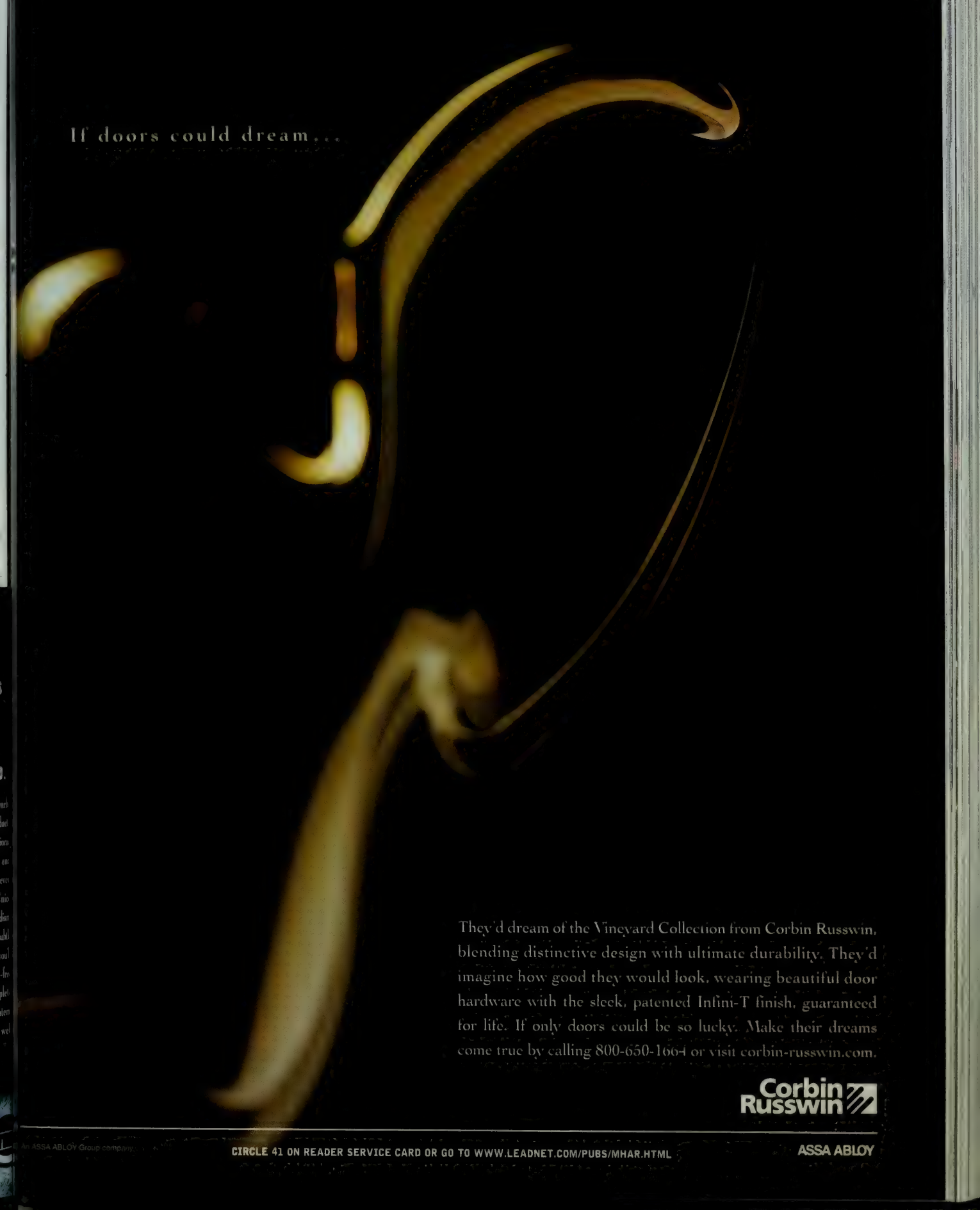
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The Olympic torch burns in front of the Classical-style Panathinaiko Stadium.

disk. The Sports Pavilion echoes the parabolic shape of the already iconic Peace and Friendship Stadium (which will host volleyball), yet it is covered with dark wood, giving it a combination of contemporary design and organic warmth and accessibility. Many of the projects, like the Beach Volleyball Stadium and the Nikaia Olympic Weightlifting Hall, echo the steel frame construction of Calatrava's work, a Modern aesthetic that maintains a refreshing lightness. Mayor Bakoyannis notes that these designs reflect a Greek tradition of sleek, simple building, evident in most Greek temples.

Not all projects are aesthetic gems. The sites at the former Helliniko Airport, which include rowing, baseball, and softball, are impressive, especially the incredible transformation of some runway areas into a rowing center. But the ubiquitous landscape of tarmac and asphalt looks at present fairly barren. It remains to be seen whether this area can be enhanced.

Meanwhile, the city's urban landscape is radically improved from just a few years ago, thanks to projects either instigated by the Olympics, or sped up significantly to be ready in time for the games.

A project begun in 1977, called the Unification of Historic Monuments, has made progress linking the ancient sites of Athens with cobblestone walkways, restoring over 200 building facades in the historic district, and redesigning several historic streetscapes and squares. Funds for the project came in quickly from the usually snail-paced Greek government after the Olympic bid was won. A recently completed major highway, the Attiki Odos, now loops around the city, providing much-needed transit alternatives. The first-rate Athens International Airport (Eleftherios Venizelos) opened in 2001, replacing the woefully inadequate Helliniko Airport. The new metro, while not complete, opened in 2000 and is now serving 400,000 people a day, with three lines sucking away some of the city's infamous traffic. The stations' modern marble, granite, and steel designs even incorporate, in some cases, the artifacts recovered while digging the tunnels.

Symbolically, the most important project is the renovation of the Acropolis, undertaken originally in the 1980s but also sped up for the games. In this case, timing is not on the Greeks' side: hundreds, perhaps thousands, of friezes, marbles, and pieces of columns are scattered around the site. "This is something we cannot rush," says Mayor Bakoyannis. "It's a very methodical, scientific process."

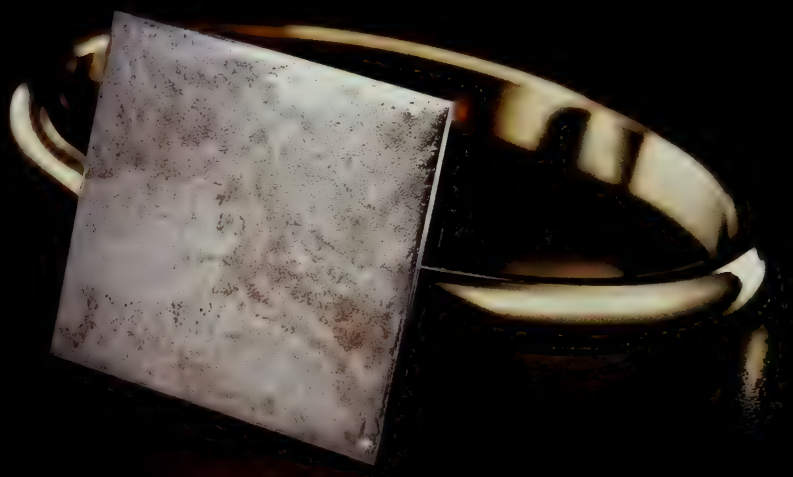
Meanwhile, at the Sports Pavilion, construction workers are singing along with a Greek song blaring on the radio, while a number of dogs lie nearby in the shade. Sure, it's a different world. But the architectural results are—at first slowly, then more quickly—making it one that's worth looking at. ■



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Why a duck? Why not an electronic billboard? A campus debate rages again.

Critique

By Robert Campbell, FAIA

Should the architecture of a building try to express what's going on inside it? If exciting stuff is happening indoors, shouldn't the outside be exciting, too?

If you think so, how do you deal with the fact that the activities inside will probably change over time? Shouldn't the outside, instead, be like a house: a calm, iconic image of home, offering no clue to the fact that last year it was occupied by the family of a Mormon elder, while this year it houses a drunken brothel?

It's not a new debate, this argument about the generic exterior and the expressive one. But it's still alive, as a symposium last month at MIT demonstrated. Frank Gehry and Robert Venturi were on the stage in a forum entitled "The University as Patron of Cutting Edge Architecture."

MIT was the right place for this topic. Urged on by William Mitchell, who recently stepped down as dean of MIT's School of Architecture and Planning, the university has fully bought the concept of the highly expressive, highly articulated, highly inventive "signature building." The occasion for the forum was the opening of one such building there, Gehry's new Stata Center. But Gehry's building is only one of several of its kind. Steven Holl's recent, highly controversial Simmons Hall dormitory is just down the street. And Fumihiko Maki, Charles Correa, and Kevin Roche all have MIT buildings in construction or recently completed.

Contributing editor Robert Campbell, FAIA, is the Pulitzer Prize–winning architecture critic of The Boston Globe.

Before the audience heard from Gehry and Venturi, historian James Ackerman offered us a quick history of campus architecture. He noted that in the past it often embodied educational theory, as in the Princeton tradition of isolated, self-enclosed Gothic quads, modeled on the medieval cloisters of England, as opposed to the more open Enlightenment Classicism of McKim Mead and White's design for Columbia University in New York.

Of patrons and feathers

Signature architecture began, said Ackerman, with H.H. Richardson's Sever Hall at Harvard, "The first building that shows a consciousness of architecture." It led to the university of today, which grows not as an integrated complex but "one building at a time."

Ackerman suggested two reasons for the rise of the signature building. One is the private patron, the donor, demanding the distinction of a building that stands out, "abandoning the link between academic theory and its architectural embodiment." Second is the fact that the signature building may be seen as a "feather in the cap" of the university, for which it may draw useful publicity. Ackerman ended by noting that the university's desire to purchase a signature style can "bring costly and sometimes unworkable results."

Ackerman's talk was the perfect setup for Gehry and Venturi. Steven Holl was supposed to be there, too, but he canceled for health reasons. With Holl absent, the other two talked entirely about Gehry's Stata Center.

The Stata is a building for the "computer, information, and intelligence sciences." It's a vast pile of labs, offices, classrooms, and meeting rooms, clad in architecture that looks to most people like the freeze-frame of a Disney animation. Stata appears to be about to collapse. Columns tilt at scary angles and walls teeter, swerve, and collide. Everything looks improvised, as if thrown up at the last moment. That's the point. Stata's architecture is a deliberate metaphor for the freedom and daring of the research that's supposed to occur inside it. The building is also sprinkled with small pavilions in odd shapes and colors, many standing on roofs or terraces. The architects gave them names, inspired by their shapes: the Star, the Kiva, Achilles, Buddha, Pisa, the Heart, the Helmet, the Giraffe, the Nose, the Twins. You'll go a long way before you find a building where the exterior is trying this hard to be expressive of every particular of its internal workings. And Stata is equally inventive inside, where its jazzy public spaces are meant to bring students and researchers out of their private worlds and into contact with one another.

In the forum, Gehry and Venturi played opposite roles. Gehry talked first. He spoke about an architecture of democracy, one that exhibits a pluralist collision of ideas. Just as



Frank Gehry's Stata Center at MIT isn't shy about expressing itself.

parts of Stata collide, he suggested, so the scientists from different disciplines will collide inside and generate collaborative sparks. He compared his architecture to debates in the Talmud, the back-and-forth of dialogue, which he said he learned from a grandfather. He pointed out that when you walk through the streets of Cambridge, you don't see whole buildings, you see parts of buildings, collaged against one another, just as parts of Stata are collaged. He admitted that because of the openness of the interior, there have been complaints about acoustical privacy. But he said MIT guys are "rugged individualists" who will change things until the building becomes theirs. "It could be enclosed into private offices of they want that."

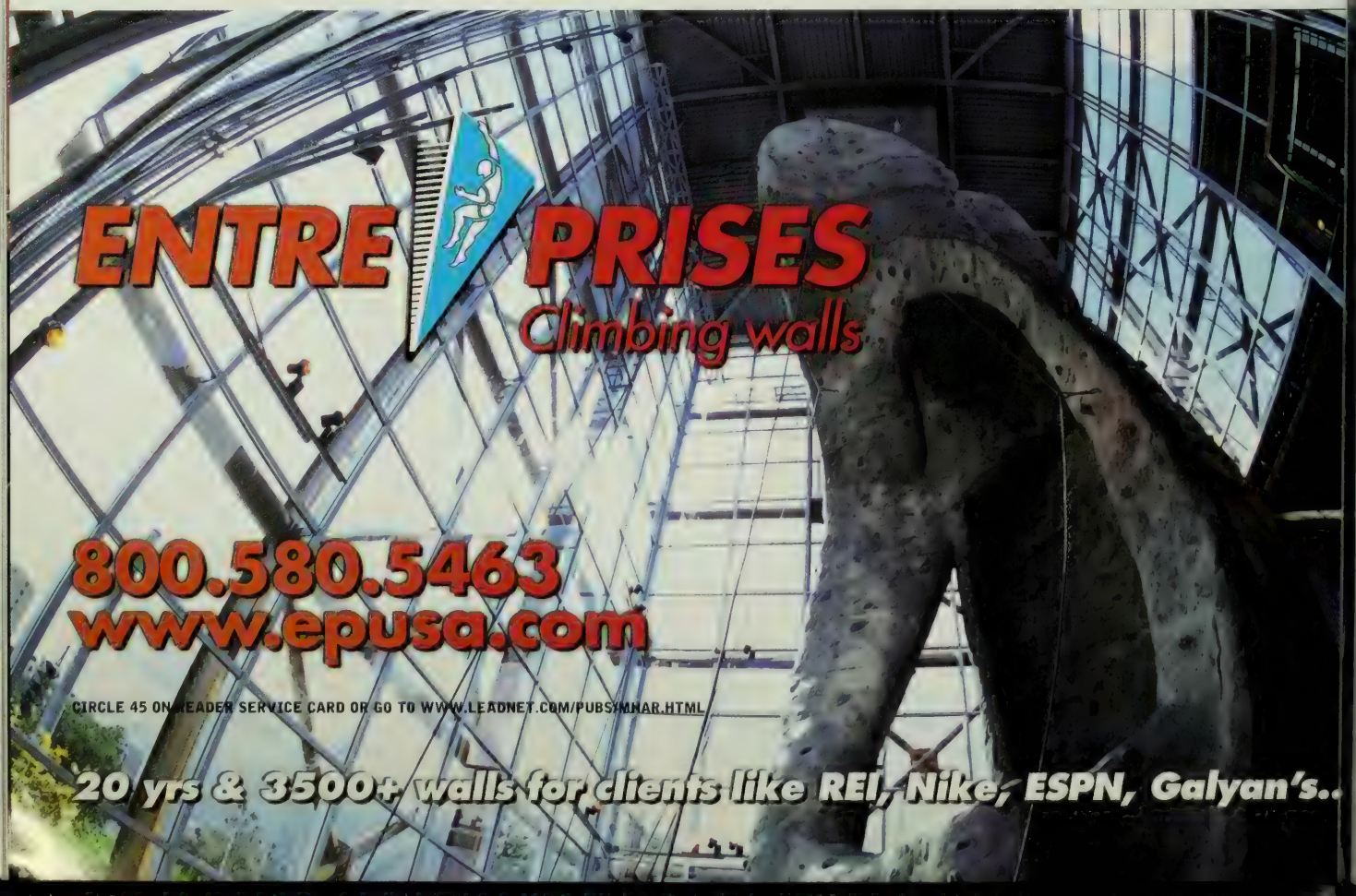
Chuck Vest, MIT's president, took Gehry's side. When he first came to MIT, he said, and saw it from the top floor room of a hotel, "it looked like a naval base. None of the buildings reflected the excitement that was going on inside." MIT's architecture, he decided, "should reflect boldness and confidence in our future."

When it came his turn, Venturi assumed the part of the grumpy guy who didn't get the job; he was Yang to Gehry's Yin. A building, he said, should be a place where the "cutting edge" happens in the activities of the users, not one where it has already happened in the architecture. The setting should not be distracting or intrusive. "The academic institution should see 'cutting edge' as product, not place," he said, "the cutting edge *in* context, not *as* context."

Venturi also complained about buildings that embody the Modernist love of industrial construction, as Stata does. He called such architec-



The architects designed the interiors of Stata to encourage encounters.



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ture a form of revivalist ornament. He said architecture should deal with the technology of our own day and that it should, therefore, be electronic and postindustrial.

Instead of "cutting-edge architecture," Venturi held up, as a counter example, what he called "the vernacular loft, the building that is iconic on the outside but loftlike and accommodating inside." He cited the Renaissance palazzo, which, as times change, can be recycled as a library or an embassy without losing its exterior dignity. And he cited the original MIT building, a domed monument of neo-Roman architecture that is, in fact, merely a hollow shell, inside of which there are endless changes and adaptations.

"Architecture tweaks convention rather than invents," he said. "Michelangelo and Palladio were good rather than original." He argued for architecture with an iconographic surface. Combined with his interest in the age of electronics, he seemed to be arguing, as he does in his book *Iconography and Electronics Upon a Generic Architecture*, for the digital facade. He talked about what he called "the transvestite building"—dressy, iconic, even grandiose on the outside, but down-to-earth and vernacular inside.

Venturi was, of course, restating the argument of his whole life. He was arguing for a Stata Center that would be a billboard instead of a duck—an iconic image with a workaday loft behind it, rather than, as in the Long Island Duck building or the Stata Center, a work in which the whole of the architecture is shaped or distorted to communicate its message.

Gehry rebutted. He turned to Venturi and said, "You're apologizing for talent." Venturi: "Talent can be evolution, not revolution." Gehry: "If I make 10 more buildings like this, it won't destroy the fabric of America."

Neither mentioned the building that previously stood on the Stata's site, although it would have made Venturi's point. It was called Building 20, and it was thrown up with emergency haste in a few months during World War II to develop radar. Building 20 was a huge, ugly warehouse of timber framing and asbestos siding. Scientists say it was the most productive building of its size, as measured by the quality of research, in American history. When it came time to demolish it, they held a wake. They called it the "Magical Incubator."

Building 20's greatness was its absence of architecture. In a building so lacking in character, it was impossible to establish academic or social hierarchies. Nobody was boss, everyone was equal, and science was democratic and freewheeling. You could bang holes in the walls or ceilings or invent crazy experiments, because nobody cared what happened to Building 20.

On the same site, Stata tries to accomplish with architecture what Building 20 accomplished by not having any. Building 20 was Venturi's vernacular loft, his generic space, although it lacked his iconic exterior. Gehry says he hopes researchers will treat the Stata as disrespectfully as they treated Building 20—that they'll take it over, mess it up, and modify it as they like. But will this very expensive, highly particularized signature architecture allow that to happen?

Bill Mitchell summed up the forum. "The MIT buildings are a series of experiments," he said. "You learn from bold experiments." It was, perhaps, a questionable metaphor. Something can indeed be learned from a failed experiment in the lab. But then it is thrown out. A failed building hangs around for a while.

There was one thing everyone at the forum did seem to agree on. Alvar Aalto's Baker House dorm is still the best building at MIT. ■

A full article on the Stata Center will appear in the August issue.

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The American Embassy: Design Excellence vs. Security?

Commentary

By Jane Loeffler

"Where is Daniel Patrick Moynihan when we need him?" This is the lament of architects who wish the champion of public buildings would suddenly reappear to decry the standardized look of new embassies or denounce the fearful stance assumed by isolated walled compounds that represent the United States abroad. But wishing will not make it happen.

The global landscape has changed dramatically in recent years, and it bears little resemblance to the world the late Senator Moynihan knew when he served as U.S. ambassador to India in the early 1970s. The State Department's foreign building program, once celebrated by him as an apt expression of American democracy, can no longer equate its architecture with democratic openness, because embassies are no longer open and need not pretend to be. Not after Al Qaeda terrorists destroyed two U.S. embassies in East Africa in 1998 by driving up to each and detonating suicide bombs that killed more than 220 and injured more than 4,000, most in adjacent structures. Not with the rising threat of more such attacks, including the narrow escape from disaster last November when terrorists determined that they could not penetrate America's new 26-acre hilltop compound in Istanbul (by Zimmer Gunsul Frasca, 2003)



The U.S. Embassy in Copenhagen—accessible and available to the public.

and blew up the more accessible British Consulate instead.

No, the design dilemma facing embassy architects today is no longer how to create welcoming buildings that proclaim U.S. identity through high-profile architecture, but how to add a noticeable design dimension to relatively low-profile design-build projects for which security is the top priority.

For many architects, this is a bitter pill to swallow, because for so long they headed the teams that dotted the globe with U.S. landmarks, including chanceries in Copenhagen (Ralph Rapson, 1954) and New Delhi (Edward Durell Stone, 1959). Between the end of World War II and the beginning of U.S. involvement in Vietnam, the United States wanted to amplify its foreign presence to check Soviet expansion. The State Department's Office of Foreign Buildings Operations (FBO) built dozens of new embassies, individualized statements with public spaces and programs that reflected the idealistic mood of that era. That was when prominent and soon-to-be prominent architects won prized commissions from the FBO and created signature structures that won them professional acclaim.

But that time has passed. America's foreign presence is undergoing a profound makeover. It no longer makes sense, if it ever did, for designers to start each project from scratch, nor is it reasonable for an embassy to take five years (or more) to complete. Several critical reports provide clues as to why architecture is playing a diminished role in the makeover. First, the 1985 Inman Report, compiled in the aftermath of suicide bombings of U.S. facilities in Beirut, called for a seven-year plan to replace 126 posts (out of 262) with walled compounds, and it proposed stringent new security standards, minimums for setbacks, maximums for windows, and other rules that constrained architectural choice. Second, the Crowe Report of 1999 reiterated the largely unheeded Inman recommendations 14 years later, after even more devastating terrorist attacks on U.S. embassies in Nairobi and Dar es Salaam, neither of which met Inman standards.

Why didn't the FBO implement more of the Inman recommendations during those 14 years? First, and foremost, because memories of Beirut faded quickly, and Congress not only reneged on promised



The U.S. Consulate in Istanbul flanked by security walls and the Bosporus.

Jane C. Loeffler is the author of The Architecture of Diplomacy *(1998) and teaches at the University of Maryland, College Park.*

funds, but even cut State Department appropriations. Also, because there was real ambivalence, even at the highest levels of the State Department, about applying universal standards to buildings everywhere, a reluctance to abandon landmark buildings and center-city locations, and some recognition of the added value that good design can bring to diplomacy. But the bombings in East Africa effectively erased those options.

The Crowe Report stressed that safety had to outweigh considerations of convenience, history, or symbolism. Architecture was not even mentioned as a consideration—possibly because architects were not asked to assist in the report's preparation.

Later in 1999, the Overseas Presence Advisory Panel's (OPAP) scathing overview of conditions at U.S. posts also contributed to the eclipse of the architectural agenda.



Rendering of the standardized embassy design by URS Corporation as mandated by the Overseas Buildings Operations.

OPAP panelists—again, no architects—called for a reduced U.S. presence and questioned the State Department's capacity to handle the enormous task of upgrading or replacing its embassies and managing its vast real estate holdings. Instead of calling on Congress to commit funds to needed programs, it recommended abolishing the FBO and urged the president to create a federally chartered government corporation to replace it. The State Department was not interested in that sort of makeover. Desperate to rebuild confidence in its operations, Secretary of State Colin Powell named a former military man, retired Major General Charles Williams, to head the FBO, approved a change in the name of the office to Overseas Buildings Operations (OBO), and elevated its status within the Department, effectively abolishing the former office and signaling a new agenda.

Williams promptly adopted a business model, turned to design-build production, and created an Industry Advisory Panel that mostly represents the corporate side of the construction industry. In doing so, he bypassed the existing Architectural Advisory Board, created back in 1954 to buffer the Department from unwanted outside criticism—when Modern architecture, not terrorism, was provoking alarm. Also, with 89 percent of all primary facilities failing to meet the 100-foot setback requirement, only two of the 25 replacement projects funded after the 1998 bombings completed, a total of 160 replacement facilities to build, and an estimated budget requirement of $16 billion, he turned to URS Corporation for a standard embassy design (SED). Based on the recent RTKL scheme for Kampala, the prototype comes in three sizes (S, M, L), all consisting of two parallel building blocks separated by an atrium. With a core preapproved for security, new projects have a 24-month timetable, start to finish.

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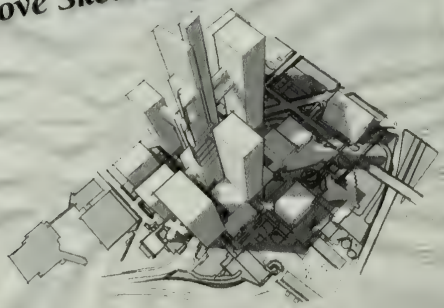
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"decorating the shed" are competing for these commissions because of the work they represent. None are yet complete, but many are under way. HOK and J.A. Jones Construction are producing SEDs in Tashkent, Uzbekistan, and in Tbilisi, Republic of Georgia, for example. And INTEGRUS Architecture and Caddell Construction have SEDs in production in the West African towns of Conakry, Bamako, and Freetown—all varying in size, but based on the "medium" model. According to Jerry Winkler, designer for all three, architects can still add distinction to such projects through site planning, landscape treatment, choice of cladding materials, and facade organization, including window spacing and size. As Winkler ruefully notes, "This is no time to be unique. The people who are paying the bills are driving the process."

Winkler's point is significant because it correctly suggests that the client for embassy construction is not OBO, or even the State Department, but members of Congress who authorize and appropriate the money, and by extension those of us who elect them. What Congress likes about Williams (and it is finding a lot to like), many architects find troubling. They object strenuously to the notion of "a cookie-cutter embassy" that is symbolized by a logo and sells sameness much as Marriott or McDonald's does. But if, as one aide to the House International Relations Committee puts it, Congress's only concern is "to keep embassies from being blown up," it is unlikely that anyone will prod OBO to make "design excellence" a higher priority.

These are particularly vexing issues for architects, I think, because Modernism is fundamentally a quest for openness. To deny the opportunity for openness is to challenge an idea that is inextricably woven into design education and into the outlook of the profession. For that reason, architects designed embassies as glass boxes in the '50s even when they had to wrap those boxes with louvers, screens, and fins to protect them from the sun. But there are other ways to imagine architecture, and better ways to provide shelter—when that is the challenge.

Some point to the success story at GSA and the design quality of its recent courthouses, for example, but OBO and GSA are not really comparable. According to former Public Buildings Service commissioner Bob Peck, "They face very different challenges," because U.S. embassies depend on host governments for protection. Where there is antipathy to the U.S. presence, protection is unreliable, at best.

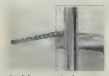
When Senator Moynihan, Peck's former boss, addressed these issues in 1999, he called for an ongoing "conversation" on how to balance security and openness at home and abroad. If that conversation has occurred at all, it has excluded many who can provide useful input, and it has not yet addressed big questions, such as how the makeover of the U.S. presence supports or undermines the long-term goal to expand public diplomacy—a key weapon in a war of ideas. Admiral Crowe has said our embassies are "already closed to the public, so it does not matter if they look open or not." That may be so, but we still need to prevent the security mandate from devouring a significant public program and turning our foreign buildings into bastions that are all but useless as diplomatic workplaces, let alone as symbols of democracy. And we need to apply the lessons learned overseas to a domestic landscape now ominously proliferating with bollards, fences, and jersey barriers. It's time to widen that conversation. The home scene is beginning to look a lot like the embassies in the '80s—and look at them now. ■



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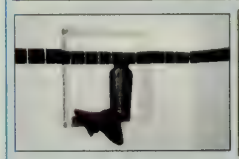
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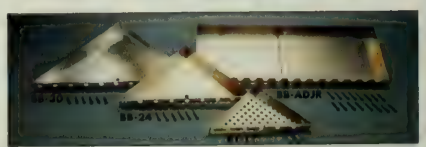




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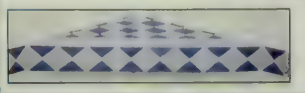
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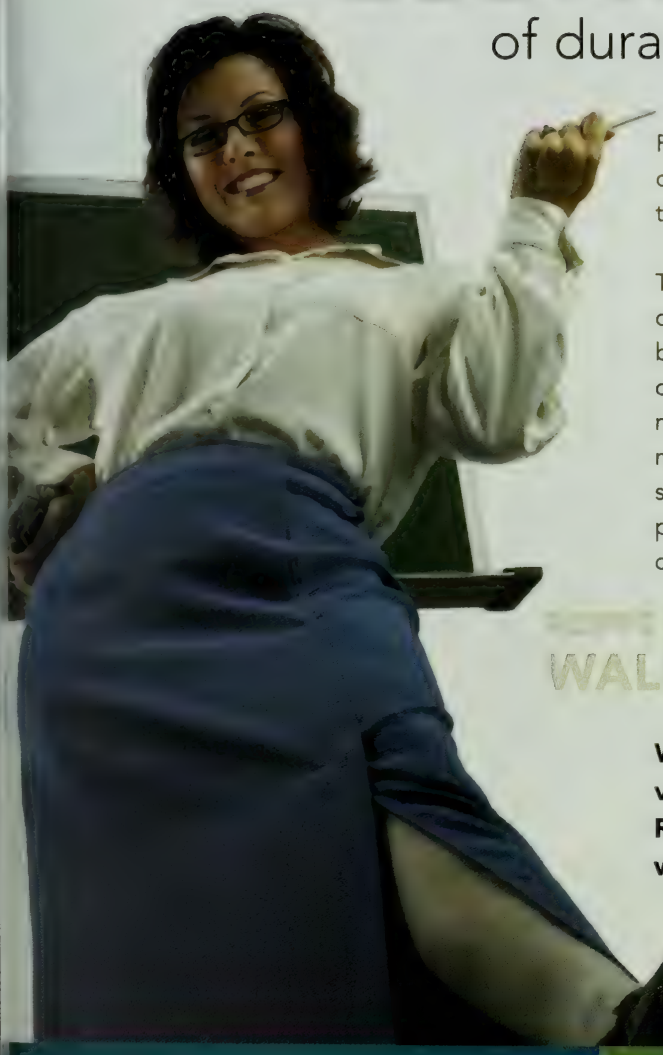
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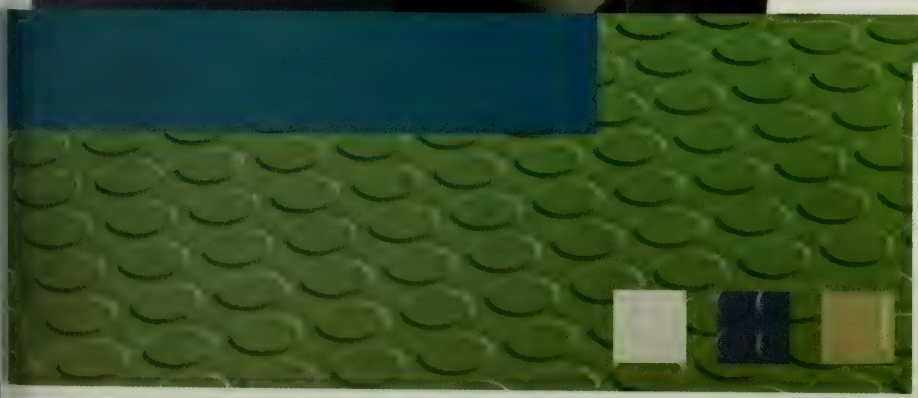


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Dining by design: At the Milan Furniture Fair, imaginative students trumped the professionals

Exhibitions

By William Weathersby, Jr.

Dining Design. *Curated by Adam D. Tihany. At Salone Internazionale del Mobile, Milan, April 14 to 19, 2004.*
Street Dining Design. *Curated by* Interni *magazine. At Triennale, Milan, April 19 to May 2, 2004.*

Special exhibitions are always theatrical highlights of the annual Milan Furniture Fair, more formally known as the Salone Internazionale del Mobile. Last April, two particularly savory shows were the centerpieces of a movable feast of imaginative ideas focused on the theme of restaurant interiors. *Dining Design*, a collection of installations by students from 10 universities and colleges around the world, was presented within the fairgrounds itself. *Street Dining Design*, meanwhile, was a memorable walkabout of splashy spaces by some of Italy's leading design professionals held at the off-site Triennale di Milano museum. Though there were striking images served up among the *Street* projects, it was more often the out-of-the-box thinking behind student work across town that proffered food for thought.

As he did two years ago with an exhibition centered around hotel design, New York–based architect Adam D. Tihany again played ringmaster for the fair's main special exhibition. Tihany curated the student projects and orchestrated a roster of additional complementary installations, such as a survey of notable dining chairs from the 19th and 20th centuries, representing designs by innovators ranging from Charles Rennie Mackintosh to Philippe Starck. An invitation-only restaurant nearby was outfitted by fashion designers Missoni and Paul Smith as a trendy accompaniment.

Sponsored by Cosmit, the organizer of the trade fair, *Dining Design* anchored the floor below the Salone Satellite trade exhibits (where young designers of edgy furniture prototypes seek backers and manufacturing deals and typically fuel a hothouse, circus atmosphere). In the time-tested tradition of the fair, art and design mixed with commerce as each student-conceived restaurant concept was furnished or partially executed by a leading Italian manufacturer, among whom this year were Kartell, Poliform, and Poltrona Frau. The collaboration between students and manufacturers resulted in remarkably polished (though mechanically inoperable, since they lacked kitchens) restaurant spaces and fittings, yet it was the quality of the projects' "big ideas" that beckoned attendees.

Often startling in their form, the student-designed restaurants each depicted an assigned eatery type and locale—for example, a Viennese coffee house in Brighton, England, or a French Bistro in Turin, Italy. While every space seemed alive with form, finishes, and youthful energy, some venues were standouts. For a karaoke bar in Lausanne, Switzerland, industrial design students from that city's Ecole Cantonale d'Art conceived *Roll Away*, an itinerant restaurant in which sheets of fabric, paper, and carpet on massive rollers facilitated a literal meals-on-wheels dining space that could be reconfigured and multiplied as needed.

Students from the Rhode Island





The University of New South Wales team's steak house (above); RISD students' ghostly projections for a bar (right); and a sushi café by students from Helsinki's University of Art and Design (below) were stellar spaces.





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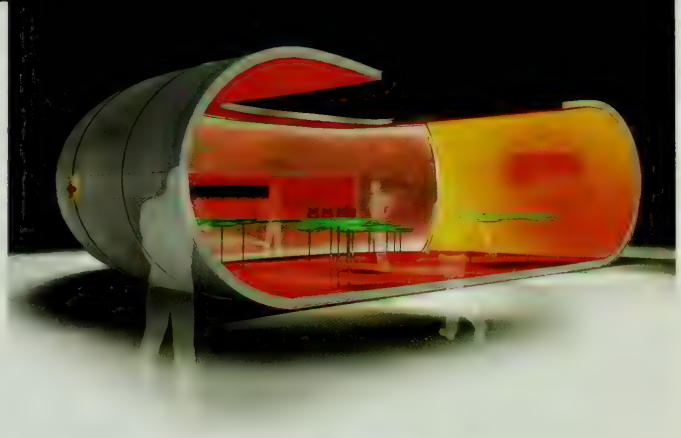
Exhibitions

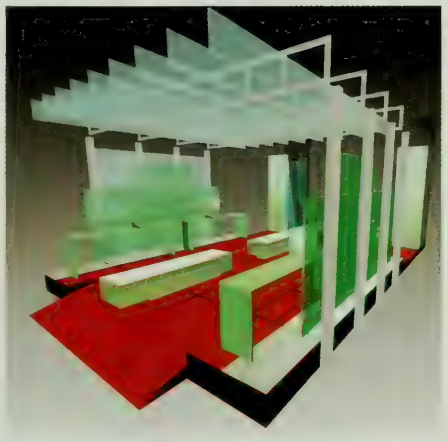
School of Design created "Trace," a wine bar for Manhattan's Tribeca, where an envelope of screens framed the ghostly images of passersby captured by a network of sensors and cameras. Furnishings were straightforward; the dance of abstract shadow and light was the draw.

The showstopper of the student work, however, was "White," a Nordic sushi bar by the students of the University of Art and Design in Helsinki. From its floor lined with white marble chips to translucent felt walls imprinted with the images of architectural structures, the restaurant had a lighter-than-air feeling that seemed to embody both the refinement of Finnish design and the Zen spirit of Japanese culture. For more on the *Dining Design* exhibition, go to www.cosmit.it.

With a preview during the week of the fair, *Street Dining Design* was presented at the Triennale di Milano, a museum of decorative arts and industrial design. The exhibition, curated by *Interni* magazine, showcased 10 kiosks designed by architects or interior designers, including Karim Azzabi, Future Systems, Studio Sigla, and the duo of Patricia Urquiola and Martino Berghinz. Within a U-shaped street format, the kiosks ranged from a bamboo grove promenade to the latter team's risotto café with a 3M-lens-film structure that surrounded a Y-shaped table and was billed as "a magic tunnel." Like many of the projects on this boulevard of dining dreams, it sounded good in over-reaching prose on the menu, but the final result was less than satisfying to the design palate. We longed for the student fare. For more on the projects, go to www.triennale.it ■

For more on this year's Milan Fair, see pages 201 and 211–20.





A rendering of the "Biomorphic Café," designed by Karim Azzabi (above), shows its sweeping aluminum enclosure with green resin tables. The rendering of the "Fine Chocolate Glass Garden," by Studio Sigla (left), illustrates its glass pergola structure for a dessert café.

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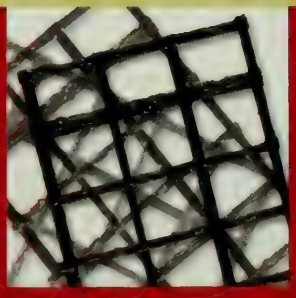
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Snapshot





Camera Obscura: ancient technique, modern art

By Sam Lubell

Nestled atop a rocky bluff on the Greek isle of Aegina, overlooking the Aegean Sea, the Peloponnese, and several rugged islands, the Camera Obscura Building has one of the most dramatic locations of any artwork in history. The light that floods this extraordinary site helps make the cylindrical structure, finished last year, appear in the waning sun as if it's made of gold. It's not. In fact, the edifice is made of plywood on an iron frame. Twenty-three feet in diameter, it has 12 tiny openings through which light enters the otherwise dark interior and produces a 360-degree panorama of the surrounding scenery. The panorama is split into 12 individual images, upside down and reversed, on a semitransparent screen. It takes about 15 minutes for your eyes to adjust to the darkness.

The process, developed more than 2,000 years ago, gives the building its name and provides an eery, but wondrously surreal experience in a place known more for beachgoers, fishermen, and an ancient Greek temple than for contemporary art. The building was constructed over an old German cannon placement now controlled by the Greek Navy. It was designed by Austrian Architect Franz Berzl with filmmaker Gustav Deutsch, and was one of a group of art projects, called the *Aegina Academy*, brought to the island in 2003.

The Camera Obscura's purpose, Deutsch points out, is to explore the perception and interpretation of our world. "If you are able to decide if what you see is real or fiction, then you are in possession of your reality," says Deutsch. "With today's media and technology, this is often not the case." The *Aegina Academy* project will pick up again in 2005, with a light installation inspired by the nearby Temple of Aphaia. ■

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Brown Center, Maryland Institute College of Art, Baltimore
Photography: © Eduard Hueber

Project Portfolio

From Seattle's bold new library by Rem Koolhaas to an imaginative Austrian visitor's center by Steven Holl to Rafael Moneo's reinvented Spanish castle – projects this month run the gamut in size, use, and location.

Products

The newest in storage and shelving is explored in this month's product focus. The Milan Furniture Fair featured in our trade show review. You'll also find the submission form for the 2004 Product Reports, updates to our Green Product Guide, and Product of the Month.

Daily Headlines

Get the latest scoop from the world of architecture.

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Megu, New York City
Photography: © Nacasa & Partners

Building Type Study: Restaurants

A feast for the eyes as well as the palette, we've got the dish on the newest and best designed spots to dine. This month, find out how architects are enhancing your dining experience.



DIVA, Seattle
Photography: © Courtesy PLACE Architects

archrecord2

We look to the West Coast for emerging architects with wide ranges in their portfolio and their routine. PLACE Architects discuss their eclectic project and client list and Fritz Haeg talks about the alternate uses of his home.

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Weathering Steel House, Toronto, Canada
Photography: © Steven Evans

Residential

Compelling and creative uses of water in home design are uncovered in this quarterly residential section. The sound, movement, and reflective properties of water connect these shelters to the outdoors.

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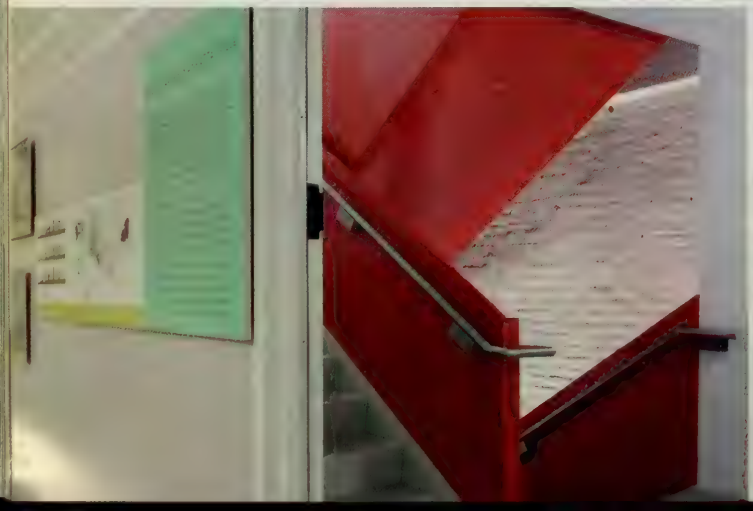
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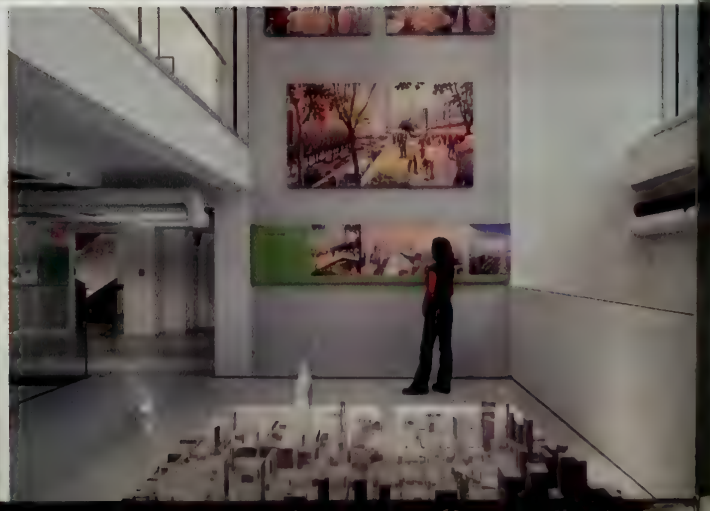
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Architecture Centers:

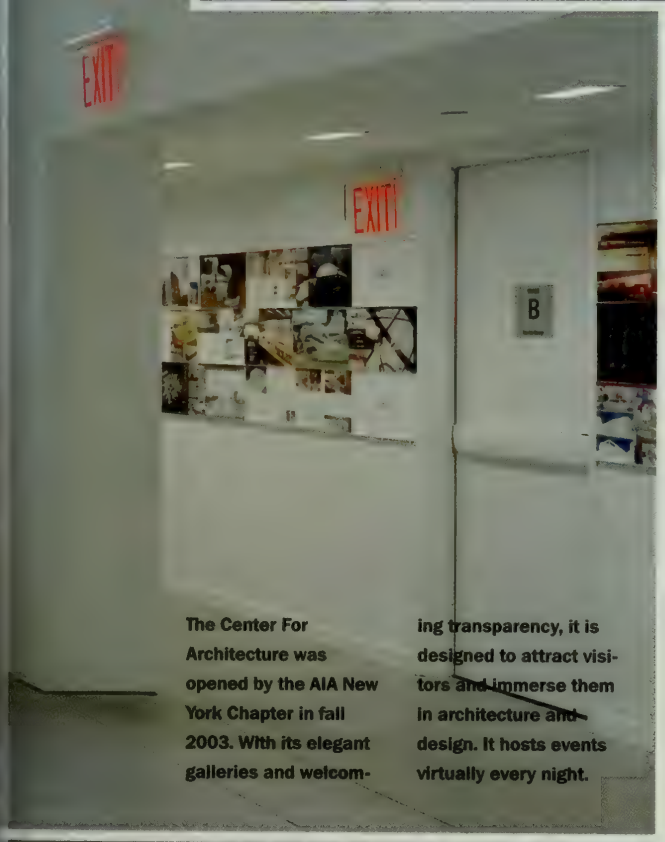
Bridging the Divide Between Architects and the Public











The Center For Architecture was opened by the AIA New York Chapter in fall 2003. With its elegant galleries and welcoming transparency, it is designed to attract visitors and immerse them in architecture and design. It hosts events virtually every night.



PHOTOGRAPHY: © ESTO/NEW YORK CENTER FOR ARCHITECTURE (THIS SPREAD)

By Sam Lubell

The crowd is cool. Many are wearing the familiar square black glasses and stretchy black shirts reserved for Volkswagen ads and trendy art galleries. But the discussion isn't ordinary. One can hear the words "public space," "square footage," "density," and "axial symmetry" between bites of fancy hors d'oeuvres.

Welcome to another night at the Center for Architecture, the AIA New York Chapter's new space on La Guardia Place in Manhattan's Greenwich Village. When the center opened last fall, the chapter expected success but may not have anticipated that the facility would become a gathering place where young and old alike—those involved with architecture and those who are not—would gravitate day and night.

Architecture centers like New York's provide a variety of functions. They serve as hubs for architecture-related events and exhibitions and as meeting places for people interested in design. They offer resources to practicing architects and house charitable programs such as architectural education for young people. But most important, the spaces play matchmaker: introducing a traditionally isolated field to a once-ignorant or skeptical public, helping to establish a dialogue between them that is essential to promoting good design. As Ted Landsmark, president of the Boston Architectural Center (BAC), an architecture school that offers its community spaces to explore architecture, sums up: "It engages the public as a client for better design."

Many architecture centers in the United States, such as New York's, Chicago's, San Francisco's, and the Boston Society of Architects, are managed by their local AIA affiliates. Architecture schools such as BAC and building design museums and nonprofits such as the Van Alen Institute, The Architectural League, and The Municipal Art Society in New York; the National Building Museum in Washington, D.C.; and the Chicago Architecture Foundation also provide such spaces. Independent of industry ties, these latter organizations claim to develop a strong trust by being guided by public interest rather than what are often considered parochial professional concerns. But most AIA chapter directors, like San Francisco's Margie O'Driscoll, point to improving dialogue between their chapters and the outside world: "We just have a different perspective," says O'Driscoll. "We talk about architecture, not just to our members, but to the community. In the long run, a better-educated client helps our members."

Welcoming the public

One of the first U.S. facilities was Seattle's, a storefront space near the city's Pike Place Market established by the AIA Seattle in 1991. Director Marga Rose Hancock notes that the center was incorporated into an AIA headquarters that had essentially been a meeting place for architects, who held closed-door business meetings there. Public input was not a consideration.

"We pretended the people weren't out there," says Hancock. "It was like, you're not supposed to be here, kid. You, mortal, you don't have anything to do with this." The new center, which opens up onto the street and welcomes the public for events, lectures, and even portfolio sharing, has changed all that. "Instead of the former message, which was 'mortal, you have no business here,' it's like architecture is accessible. You can come in and talk to an architect. They're just like you and me."

Catering to architects, not "people," seems to have been a common theme among many AIA chapters before the advent of architecture centers. AIA New York Chapter executive director Rick Bell, FAIA, notes



1

The Netherlands Architecture Institute (1) appears to float. Madrid's Las Arquerias (2) is a daring exhibition space for architecture managed by the Ministry of Development's Department of Architecture. The Amsterdam Center for Architecture (3) and the Architekturzentrum in Vienna (4) explore varied dynamic designs.





2



3



4

that the New York Chapter had been isolated by its old headquarters, on the 6th floor of the New York Design Center at 200 Lexington Avenue, which houses mainly designer showrooms. (Chicago's AIA headquarters have similar offices, located on the 10th floor of the city's Merchandise Mart. The center has a large conference room, but no exhibition space.)

"We wanted to make it clear that this wasn't just a clubhouse for architects," says Bell of the chapter's new space, built into the first floor and two subfloors of a former industrial building. The 12,000-square-foot building, designed by New York–based Andrew Berman Architect, combines aesthetic sophistication with a concerted effort to lure visitors. The center features a 64-foot-wide glass facade that attracts attention and allows onlookers to gaze into the structure's subbasement floors, which are open to the sky thanks to strategic removal of floor space above.

"I think people make decisions to enter spaces based on what they can see," says Bell. Such techniques also provide a flood of natural light and a sense of copious space. Moreover, the center offers abundant, attractive gallery areas that exploit the industrial aesthetic of the existing building (exposed pipes, ducts, brick) and, with a dramatic lighting scheme, make the space an attractive new exhibition venue.

Although not all located downtown or on the street, many centers are alluring spots whose architecture shows off some of the best design the profession can offer. The Chicago ArchiCenter, in the Daniel Burnham–designed Santa Fe Office Building, opened in 1993. Designed by Jaime Vasquez of SOM Chicago, it resembles a top-flight art gallery bordering on a designer boutique, with striking contours and studio-quality lighting. One of the grandest spaces in America (although, some argue, not an architecture center, because its main function is as a museum) is the National Building Museum, adapted in 1985 from an 1880s Neoclassical structure by Montgomery Meigs. The building's massive Corinthian columns and its 316-foot height make it among the most dramatic settings for architecture in the country.

After luring visitors inside, a center's next goal is to engage. Last fall, the Center for Architecture served as a theater for the staging of *Private Jokes, Public Spaces*, an insightful play about an architectural studio by Moshe Safdie's son, Oren. The show drew good reviews and a varied audience, not just of architecture fans. Other events on the center's seemingly inexhaustible calendar include *Going Public*, a display of hundreds of public projects in the city; the model of David Child's proposed "Freedom Tower"; and lectures and symposia about topics ranging from skyscrapers, museums, and construction finance to the history of Puerto Rican architects. Past speakers have included I.M. Pei, David Childs, Daniel Libeskind, and Zaha Hadid. Other centers organize tours, present design competitions, and explore important social and design issues in diverse exhibitions.

Finally, the function that could be the most important of all—one that grows out of visitors' initial interest—is encouraging good design through public input.

"Having the general public weigh in and be educated about architecture makes for a population that can support positive changes. That's how the profession evolves," says O'Driscoll of the San Francisco AIA headquarters, which is located in the city's Downtown Business District and hosts regular public events, lectures, and charrettes, allowing people to respond to new developments, wage debates on the city's housing crunch, and become informed about other design issues. Residents who come in, she says, "care passionately," and seem to be as familiar

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5



6



7

The Canadian Centre for Architecture (5) was built in 1989 and contains one of the largest architecture archives in the world. It features an impressive theater (top) and exhibitions, like the one of Cedric Price's work (inset, top). The National Building Museum (6) in Washington, D.C., is one of the city's grandest spaces. The Chicago ArchiCenter (7) draws people inside with its striking design, according to officials.

with architectural terms as most architects and planners.

Meanwhile, Alicia Pivaro, deputy director of The Architecture Foundation in London, says that thanks to its work involving the public in design decisions, incorporating public dialogue into construction projects is now par for the course in London.

"Members of the profession are consulting with the public and involving them," she notes. "There's a much greater openness by architects and developers to try to work with the public, and I think we were one of the players in getting that sea change."

Challenges, challenges

Of course, as Pivaro points out, interacting with the public isn't always smooth sailing. Often people are uneasy with architecture, especially new architecture. "People are suspicious of change," she says. Designs that are highly creative are often seen as inappropriate. Which is why architecture centers work so hard to open people's minds not just to architecture in general, but to more progressive work that might scare them at first. The other challenge, says Pivaro, is that architects must be heartfelt in their interaction with the community. "Just because you have community input doesn't mean you're going to get a good design. You have to work with a good design team. You have to involve the community in a real way, not just as a PR and marketing stunt."

Another acute challenge faced by centers is dealing with drains on funding. This problem is particularly keen in the United States, where architecture centers don't have significant public patronage, as many European centers do (they do have more private funding, but the amounts pale in comparison). While the Center for Architecture is one of the elite in the U.S., its operating budget is around $1 million per year (about $600,000 from dues, the rest from private sources). The Netherlands Architecture Institute (NAI), in contrast, receives $6 million euros (about $7.2 million) every year from the government, 80 percent of its operating budget. "Architectural issues are so central to the country's social, economic, and political discussions," explains NAI's director, Aaron Betsky. Here, on the other hand, "It's certainly always a struggle," says Lynn Osmond, president of the Chicago Architecture Foundation. "It's hard for funders to understand what we are, and what our mission is. We're really pioneers as far as promoting architecture as an art form."

European and Canadian centers (like the impressive Canadian Centre for Architecture, built in 1989) have generally found acceptance and developed favorable reputations, which, with greater amounts of funding, has fostered splendid designs for their quarters, such as the NAI's building in Rotterdam, designed by Jo Coenen and finished in 1993. This is a light-as-air glass, steel, and corrugated-metal space—a clear box that seems to be floating on water. Also in the Netherlands stands the new Amsterdam Center for Architecture (ARCAM), designed by René van Zuuk, a soaring, twisting building that suggests it was shaped by wind and water [RECORD, February 2004, page 65]. In 2005, Paris will open the Modern Cité de l'Architecture et du Patrimoine, inside the Palais de Chaillot, near the Eiffel Tower. The center will merge the architectural collections of the Museum of French Monuments, the French Institute of Architecture, and the Center of Higher Learning of Chaillot. Meanwhile, Madrid's recently opened Las Arquerias, the main exhibition space for architecture in the city, could be the most architecturally interesting of all. Designed by Jesús Aparicio and Hectór Fernández and built into the 1930s Neoclassic loggia of Secundino Zuazo's New Ministries, its main lecture and performance hall is cradled in



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8

AIA San Francisco (8) hosts regular public forums. Boston has two spaces working together: the BSA's Architects Building (9), and the Boston Architectural Center's headquarters (10). Seattle's AIA headquarters (11) was one of the first to be opened to the public. Like San Francisco's offices, it will soon be redesigned.

a U-shaped concrete slab, forming a highly dramatic spatial experience.

Few American architecture centers attain such design distinction. Likewise, few can stage the elaborate exhibitions that are common in Europe. The NAI, which has 22,000 square feet of exhibition space, recently presented a show called *Start*, featuring 40 items documenting the early work of Rem Koolhaas. Another NAI installation, *Content*, held simultaneously at the Kunsthaus Rotterdam, covered Koolhaas's work from 1996 on. Besides lacking resources for such ambitious exhibition programming, most American centers are unable to house as extensive archives or undertake such high-profile meetings and debates, nor do they have such an effective means of coordination as the European architecture network called GAUDI (www.gaudiprogramme.net).

The future

Despite their struggles, U.S. centers are becoming more popular, mirroring the field's increasing cachet. Chicago's tour attendance has doubled in the past five years, while its budget has grown from $2.5 million to $7 million in the past seven years. Boston Society of Architects' annual operating budget has ballooned from $7,000 a year in 1985 to $3.3 million this year. San Francisco, meanwhile, has seen a growth in attendance from 100 people a month to 600 or 700 within the last year and a half.



9



10

Several centers have begun to reshape their images in the manner of the New York center. The Seattle space is soon to be redesigned by a team of architects from the AIA Seattle's Young Architects Forum. A design charrette in February produced updated, very modern sketches, says Peter David Greaves, AIA, Seattle president-elect. "Conceptually, it's like a camera obscura; you go through a dark space into a light one with a tapered, plywood-clad tunnel at the front entry." Construction is expected to begin this July and be completed by September. Meanwhile, the San Francisco center will soon undergo a redesign by local firm Quezada Architecture. As principal Fred Quezada, AIA, points out, the firm will gut the present 6,000-square-foot space and make it "extremely contemporary, at least in the functional sense." The new center will include gallery, meeting, and classroom space, audio/visual areas, and conferencing facilities. Design will commence in a few months and be completed by the end of this year, Quezada adds. Meanwhile, officials in Philadelphia and Newark have expressed interest in centers of their own.



11

Like New York's, other U.S. centers have begun to place more emphasis on exhibitions, and on establishing better coordination among themselves. Osmond says that the Chicago Architecture Foundation is putting a Chicago spin on the National Building Museum's massive, and well received, *Big and Green* show, dedicated to environmental building, for its own space. The Foundation is also passing on the torch: consulting with Australian architect Glenn Murcutt to form that country's own Architecture Foundation, including an architecture center (www.architecture.org.au) that will introduce what Osmond calls a traditional public to newer ideas. "They want to make sure there's a dialogue about architecture, and that people learn to embrace modern design," says Osmond. "It's fun. There's all this interest in the world about architecture. But the real question is: How are we going to put this movement forward rather than letting it drop?" ■



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The idea of floating, enclosed areas connected to wide-open public spaces by escalators sketched in the early model (opposite, bottom) is realized in the completed building's shifting forms (this page and opposite, top).

Thanks to **OMA's** blending of cool information technology and warm public spaces, **SEATTLE'S CENTRAL LIBRARY** kindles book lust

By Sheri Olson



In Seattle's new Central Library, a taut skin of steel and glass shrink-wraps a stack of shifting, precariously balanced volumes. Can you judge this book by its cover? "It looks like an arbitrary shape, but once you step inside, you get it," promises Seattle's City Librarian, Deborah L. Jacobs. According to the Office for Metropolitan Architecture (OMA), Rotterdam (in joint venture with LMN, Seattle), the irregular form arises from an almost slavish devotion to a detailed program developed by the library board and staff. "A truly rational building does not look rational," says Joshua Ramus, principal in charge for OMA.

They began the commission with a three-month-long investigation into the future of the book, calling on local tycoons whose fortunes were built upon the very digital technologies that would seem to make printed matter obsolete. OMA director Rem Koolhaas believes the library as an institution has moralistically and unwisely positioned itself as the bastion of the book against the byte. "It's not a matter of and/or," says Koolhaas. "The modern library, especially in a cybercity such as Seattle, must transform itself into an information storehouse aggressively orchestrating the coexistence of all available technologies."

Koolhaas sought to balance the explosion of information with the library's increasing role as a social center. There are five programmatic "platforms," blocks of floors designed for a unique purpose: parking, staff area, meeting rooms, books, and offices. "Flexibility can exist within each compartment but not at the expense of another," Koolhaas says. The platforms alternate with four large, open floors: a childrens' area, Living Room, Mixing Chamber, and reading room—all places where people can meet, search the Web, or just sit and read. "OMA's solution is simple and complex at the same time," says Jacobs, a demanding client with a genius for building public consensus around the radical design.

The architects pushed and pulled the platforms almost 50 feet out of vertical alignment with each other to capture light and views. As much as OMA enjoys casting itself as technician not artist, there's an aesthetic at work, even when it verges on anti-aesthetic. "When we tried to tweak it too much, it just didn't work," says Ramus. "The form had an integrity of its own." The sky-blue, diamond-patterned steel grid that supports the glass cladding spans the distance between the offset platforms in great, angled planes.

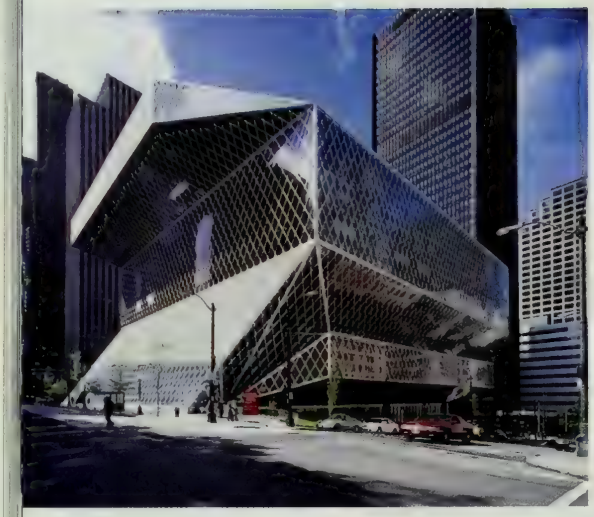


With its aggressive silhouette and the apparent scalelessness of its diamond-grid cladding, the 11-story library holds its own among office towers three times its height. "Its a machine that fragments and reconstitutes the city around it," says Koolhaas. Illuminated at night, it glows like a giant X-ray, exposing its vital organs through its exoskeleton.

The public was involved from selection on. (Standing-room-only crowds turned out to see Steven Holl and Koolhaas go head-to-head over the course of the three days of presentations [RECORD, August 2000, page 120]). The library board came back from a whirlwind European tour impressed by OMA's ability to live

Project: *Seattle Central Library, Washington*
Architect: *OMA—Rem Koolhaas, Joshua Ramus, Mark von Hof-Zogrotzki, Natasha Sandmeier, Meghan Corwin, Bjarke Ingels, Carol Patterson, design/management team; LMN (joint-venture partner)—John Nesholm, Sam Miller, Bob Zimmer, Tim Pfeiffer, Steve DelFraino, Mary Anne Smith, Dave Matthews, Vern Cooley, Pragnesh Parikh, design/management team*
Engineers: *Arup, Magnusson Klemencic Associates (structural); Arup (m/e/p)*
Consultants: *Inside/Outside (interiors); Bruce Mau Design (graphics); Dewhurst Macfarlane & Partners and Front (facade)*
Contractor: *Hoffman Construction*

Sheri Olson, FAIA, is RECORD*'s Seattle-based contributing editor and the author of* Cutler Anderson Architects *(Rockport Publishers, 2004).*





Projecting forms (supported by enormous cantilevered trusses) reach for views. The steeply sloping site—two floors in a city block (opposite)—adds to the kinetic effect. The Fourth Avenue entrance (near left) opens to a childrens' area. The gridded curtain wall peels away to form an arcade at the main, Fifth Avenue entrance (far left and below).





within a budget. (The library's was relatively modest: $165 million, including $10 million for a temporary location during construction.) In the end, the board's decision was not based on the bottom line. "Can you do beauty?" asked one board member. "Yes," was Koolhaas's immediate response.

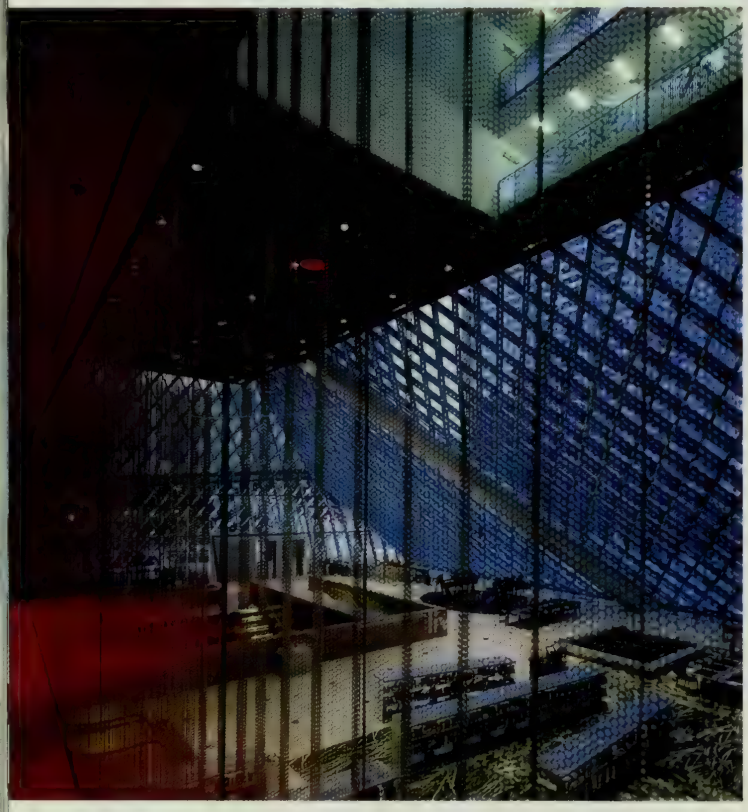
Koolhaas delivers as soon as patrons step through the Fifth Avenue entrance on the uphill side of the full-block site, into a dramatic three-story volume that appears larger than what seems possible from the outside. Appropriately dubbed the Living Room, it's the library's—and Seattle's—largest and most inviting public space. Fiction collections, a Teen Center, a café, a shop, and service-desk areas alternate with computer desks and squishy rubber couches. Photomural carpets of grass and leaves (by Petra Blaisse of Inside/Outside, Amsterdam) float on the wood floors like giant throw rugs. Wood-clad terraces descend through an auditorium (which can be closed off), following the site's steep slope and seamlessly linking the Living Room to the childrens' area two levels below.

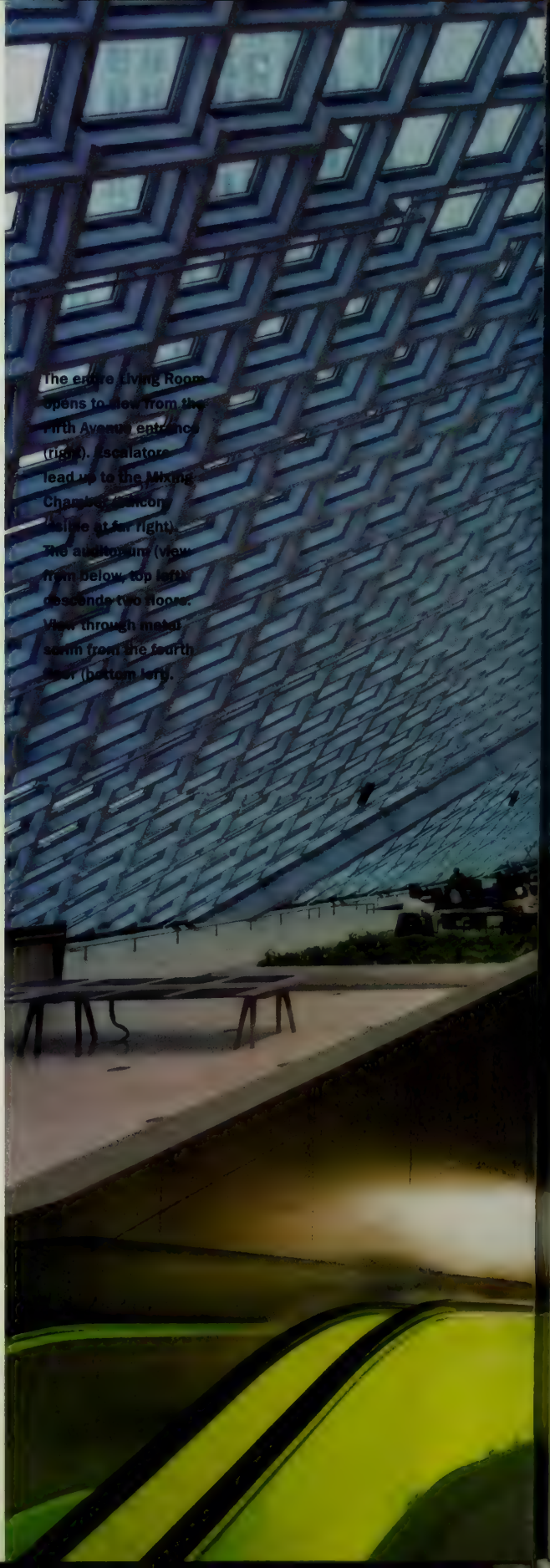
The outrageous hot-pink curved hallways threaded among the fourth-floor meeting rooms play to the public's desire to be shocked by the avant-garde. It's the architectural equivalent of the prim librarian ripping off her glasses and letting her hair down. Such touches may entice patrons who have come to associate books with Barnes & Noble comfort or Amazon.com convenience. The library's dilapidated, undersize old quarters, on the same site, had become de-facto housing for the homeless. Now some who once lingered listlessly will run the latte cart in the Living Room (part of a jobs program organized by a nonprofit group).

"IT'S A MACHINE THAT FRAGMENTS AND RECONSTITUTES THE CITY AROUND IT."
—REM KOOLHAAS

Fluorescent-green escalators ascend from the Living Room to deliver patrons to a huge service desk at the center of the fifth-floor mezzanine. This Mixing Chamber places librarians, reference materials, and public-access computers all in one place. Patrons need not wander



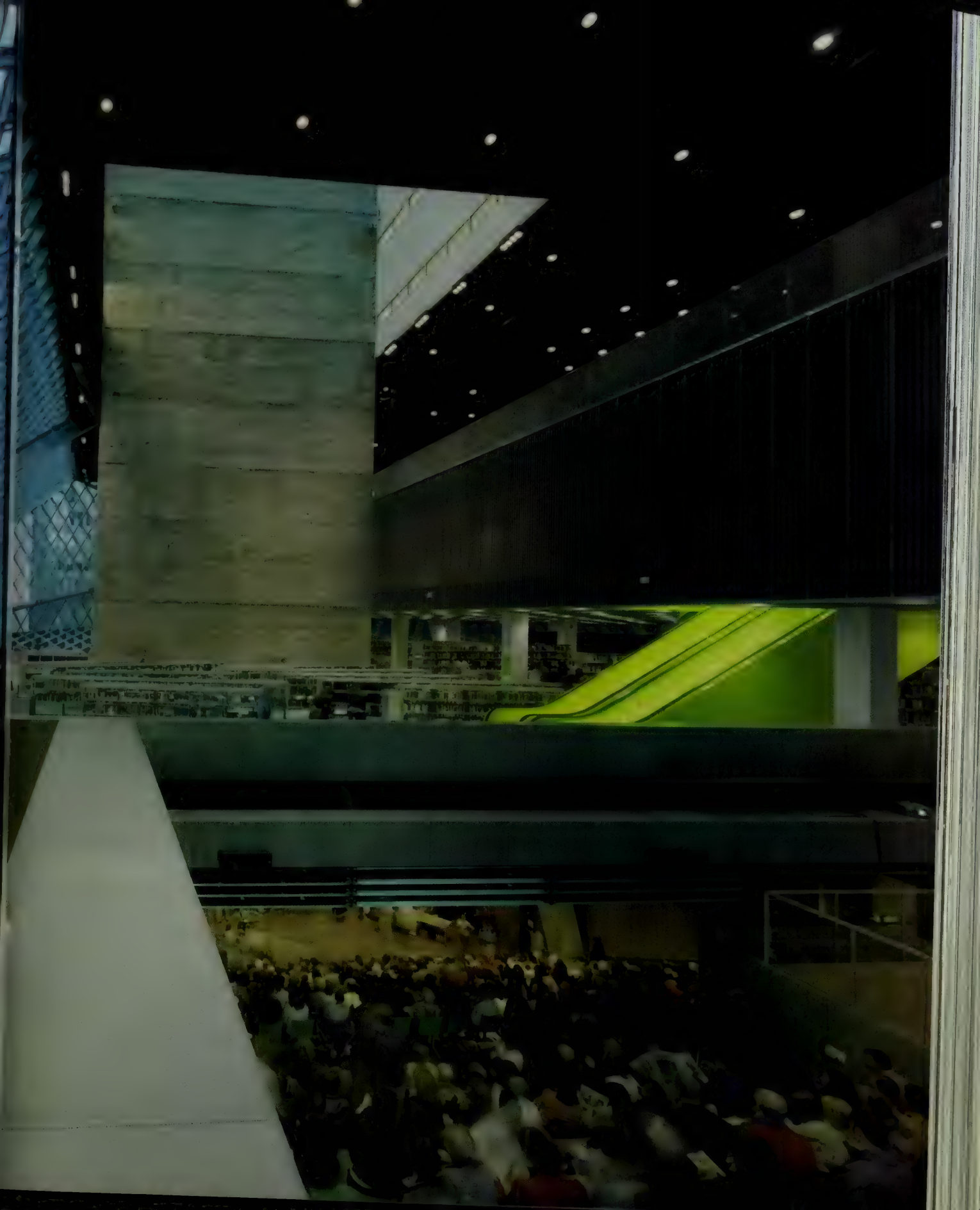




The entire Living Room opens to view from the Fifth Avenue entrance (right). Escalators lead up to the Mixing Chamber balcony (visible at far right). The auditorium (view from below, top left) descends two floors. View through metal screen from the fourth floor (bottom left).

from one department to another. "Instead of the Internet replacing librarians, it has made them more valuable," Jacobs says. "They help people sift through information." At 363,000 square feet, the size of the library doubled but not the size of the staff. Instead, technology frees librarians from drudgery, helping to automate sorting and checkout, among other functions.

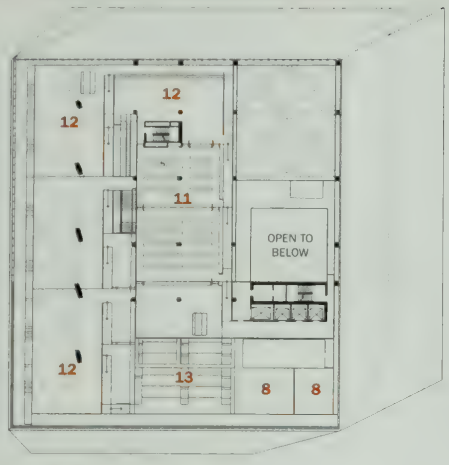
From the Mixing Chamber, an express escalator leads to the center of the library's most innovative and controversial feature, the Books Spiral. It's less a spiral than a giant, continuous ramp that inches up across the city-block-size floors (it's entirely wheelchair accessible) before switching back as it rises through four levels. Unlike most libraries forced to arbitrarily split collections between floors as they grow, Seattle's continuous circuit unites most of the nonfiction collection, allowing subjects to expand or contract without disrupting Dewey decimal order. The well-lit, generously sized levels invite browsing, but shortcuts through the stacks are available by stair or elevator for those who know exactly what they want. Tucked among the stacks are small



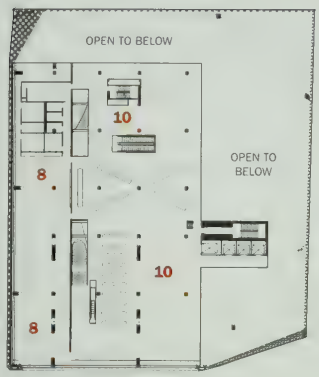


Screened in red, the aorta-red meeting level (bottom left) is sandwiched between the Living Room level (visible above) and the Mixing Chamber (bottom right).

An inventive fire-protection scheme permitted the library's extraordinary openness. A red stair links the meeting-room level to the Mixing Chamber (opposite, bottom right). The chartreuse escalator carries patrons to the Book Spiral (opposite, bottom right—visible as a lighted strip at the top).

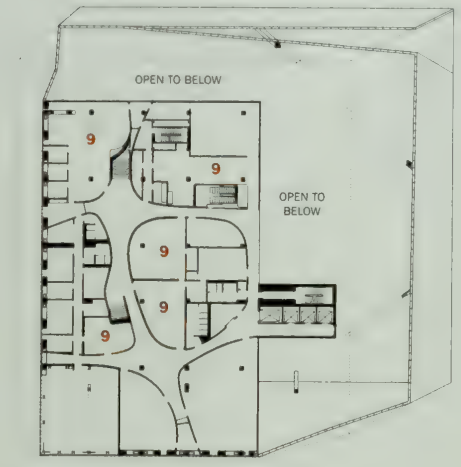


READING ROOM–TENTH FLOOR

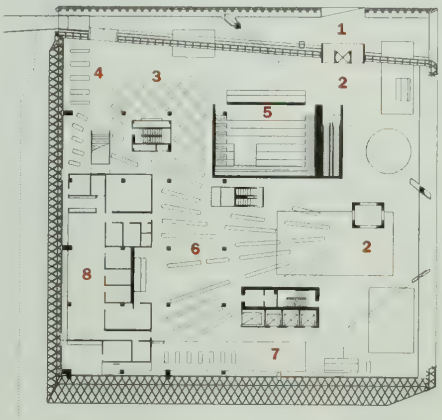


MIXING CHAMBER–FIFTH FLOOR

1. *Arcade*
2. *Reception*
3. *Coffee cart*
4. *Shop*
5. *Auditorium*
6. *Fiction*
7. *Teen Center*
8. *Office*
9. *Meeting*
10. *Mixing Chamber (reference)*
11. *Closed stacks*
12. *Reading terrace*
13. *Book Spiral*
14. *Children*
15. *Living Room*
16. *Headquarters*

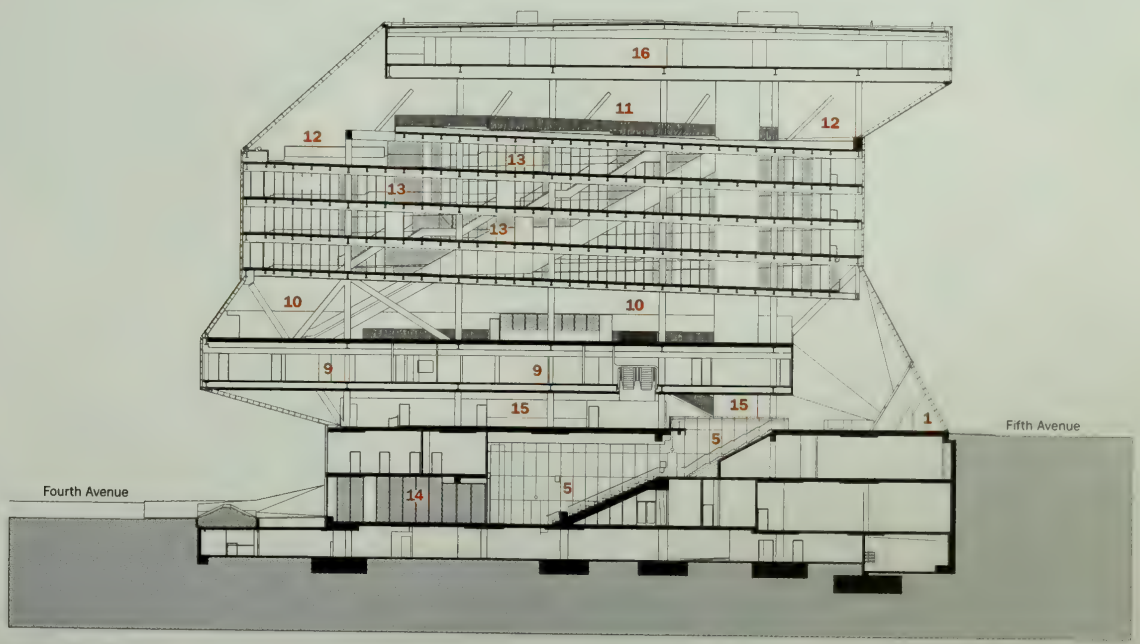


MEETING ROOMS–FOURTH FLOOR



LIVING ROOM–THIRD FLOOR

N 0 20 FT. 6 M.



EAST-WEST SECTION

0 20 FT. 6 M.



In this view from the Mixing Chamber to the Teen Center in the Living Room, the I-beam curtain-wall supports are visible, as well as massive, tilted columns. The external facets focus views out.



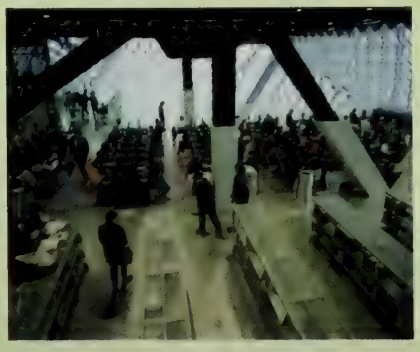
Architecture Without Artistry

For more than 30 years, Rem Koolhaas has been theorizing a great deal and building rather little, so it comes as something of a surprise that his most conceptually rich building so far isn't in Europe, where daring buildings are more often erected, but in Seattle—no avant-garde hotbed.

Having temporarily commandeered a yet-unoccupied office that overlooks the Seattle library's dramatic atrium, the 59-year-old Koolhaas described his process in an interview. "Our initial impulse is to consider how to make a particular program fresh, to consider what is redundant and what deserves to be reinvented," he explained. There's a perpetual effort, he added, to tease out "the seeds of newness" innate to the project.

Such an intellectualized approach doesn't concern itself much with the expressive potential of construction. From many vantages, the building looks gawky and provisional, its form a resultant of ideas, rather than massaged for expressive elegance or crafted beauty. The soaring spaces come with cheap finishes; for example, the columns and beams are covered with lumpy fireproofing and dangling pipes (as in the Mixing Chamber, below)—a bit disturbing, even though they are painted out. This is purposeful, says partner Ole Scheeren; questioning conventions of beauty and craft are part of OMA's process.

These attitudes may account for why so many projects have withered as clients couldn't persuade themselves to go the distance: the Universal Studios headquarters, the Whitney Museum (now revived, with Renzo Piano as architect), a hotel for Ian Schrager in New York, the Los Angeles County Museum of Art (a project, drastically reduced in scope, that has now gone to Piano as well), Prada San Francisco, the Guggenheim in Las Vegas's Venetian casino [RECORD, January 2002, page 100], which closed.



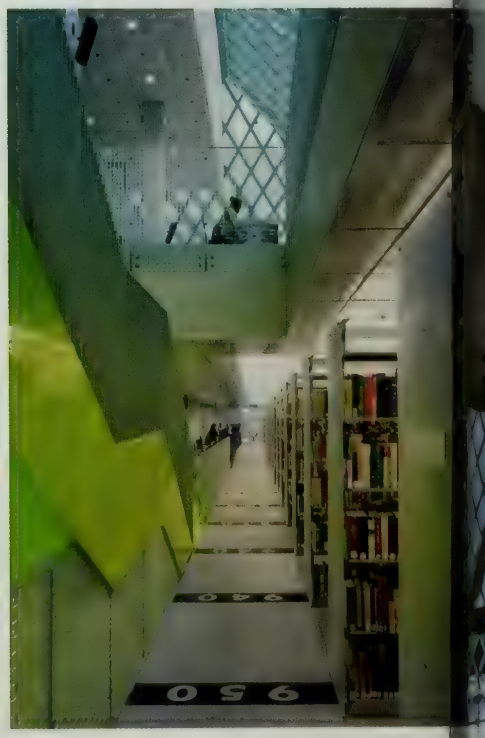
Or do clients worry about the very restlessness of Koolhaas's intellect? Each breadloaf-size book seems to introduce a new Rem. Embracing instability is the theme of the firm's latest publishing opus, *Content* (Taschen, 2004). "We are interested in instability, but we don't necessarily have a preference for it," Koolhaas explained. Still, he feels confined by how long it takes to build projects, worrying that the ideas move beyond the building by the time it's done. "It's rare that an intention or an ambition or a [client] coalition survives that long," he commented.

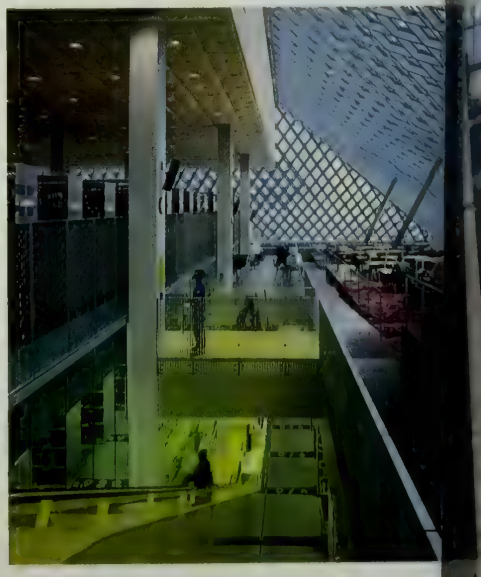
Where does architecture fit as the firm moves into trend-gleaning endeavors like magazine publishing? Architecture remains the core effort, he asserts, and there will soon be, at last, quite a lot of built work to show for the years of effort. Along with the IIT Campus Center [RECORD, May 2004, page 122] and Seattle's library, there's the recently completed Dutch Embassy in Berlin, an Epicenter store for Prada that opens this summer in Los Angeles, and a convention-shattering concert hall in Porto, Portugal, finishing up. Still, Koolhaas seems genuinely aggrieved at the projects that haven't gone ahead. *Content* is filled with justifications for them and little-disguised anger at the projects that died in America. The cover alone will likely keep it off many bookstore shelves. It features a triumvirate of Saddam Hussein, North Korea's Kim Jong-Il, and George Bush. The president grasps a crucifix and is crowned by a package of McDonald's french fries. Not the kind of thing you'd FedEx to most prospective clients.

I was once among those who feared that Seattle was building a city-block-size joke. It is to Deborah Jacobs's credit that she harnessed a kind of genius other clients feared. She spearheaded approval of the bond issue that underwrote the building, championed the raising of some $86 million in private money to fund acquisitions and operations throughout the system, and helped build and maintain support for this monumental civic effort.

The building's appeal goes beyond the spatial pyrotechnics evident in the photographs. Even the seemingly alien form of the exterior fits uncannily well, especially when the ubiquitous local mists swirl around it. Like a chunk of glacier that has somehow run aground in the middle of downtown, it evokes the unconquerably primordial nature of the Pacific Northwest's landscape. But delivering a library that genuinely extended the public realm is Koolhaas's most important contribution here. There's little like it anywhere. *James S. Russell, AIA*

The Book Spiral (below), cut through an atrium (opposite) floats over the Living Room, braced by massive, angled columns. An escalator runs between the opposing slopes of the Spiral's gentle, ramplike levels, culminating at a top-floor reading room (bottom).









Public areas open onto the atrium as it rises (this page) from the Living Room to the topmost Headquarters level. The Book Spiral arrives at a gently terraced reading room (opposite) under a vast sloping skylight.



reading areas, special collections, and librarians at service desks overlooking an atrium that rises eight levels from the Living Room.

As varied as the different spatial experiences within the library may be, they all share spectacular views of the surrounding skyscrapers and the vistas between them to Puget Sound and Mount Rainier. For Jacobs, the quality of the views is the biggest surprise and justification for building on the library's old site, even though it meant relocating during construction. "The views are so much more gorgeous than what we expected," she says. It's unusual for a library to invite this much of the world inside its cloistered walls, but that, says Koolhaas, is the point: "The glass goes beyond transparency to absorb every vibe of the city."

The Books Spiral culminates in a light-filled reading room under a sloped, 40-foot-tall plane of steel and glass. A padded white ceiling (for sound absorption) floats above a series of wide terraces set with informal groupings of chairs and tables.

To open the vast spaces under glass, Arup made the mesh of I beams supporting the curtain wall into the primary means of resisting the building's wind and seismic loads. (The design development and detailing of the structure was done by Magnusson Klemencic Associates, Seattle.) The unusual strategy also minimizes the number and size of the internal columns, since they aren't doing double duty. The upper-floor projections are cantilevered, made rigid by external trusses, and supported on just a few massive columns. Because they handle gravity loads, these columns are fireproofed, as are a long-span grid of columns running through the enclosed platforms, which OMA painted black and flecked with mica for sparkle. The diamond-shaped glass lites, each 4 by 7 feet, were sized to eliminate glass waste and ease installation of the triple-glazed panels. Fine, expanded metal mesh, sandwiched between the glass layers, acts as a micro-louver to reduce heat gain and glare. A floor-sourced displacement-air system conditions only the occupied layer of space. A performance-based approach to fire engineering permitted the openness and the seamless interconnectedness of the design.

The building opened with few glitches. "It works," says Jacobs. "People will either like it or not, but their opinions will be based on aesthetic preferences, not function," she adds. "What does it say when the library is the most exciting building in town?" she mused as she surveyed the crowd of 28,000 people streaming through during the library's opening day celebration. In a word, everything. ■

Sources

Curtain wall: *Seele; Okalux; Walter's & Wolf; Supersky (skylights)*
Glazing: *Okalux; Viracon; TGP*
Doors: *Kawneer, Boon Edam (entrance); Zesbaugh, Building Specialists (fire protection); Cascade (wood)*
Wood floors: *Worthwood*
Furnishings: *Vitra; Quinze & Milan*
Conveyance: *Schlindler (escalators); Thyssen (elevators)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

Behnisch, Behnisch & Partner and Steven Ehrlich Architects contribute signature buildings to KENDALL SQUARE near MIT



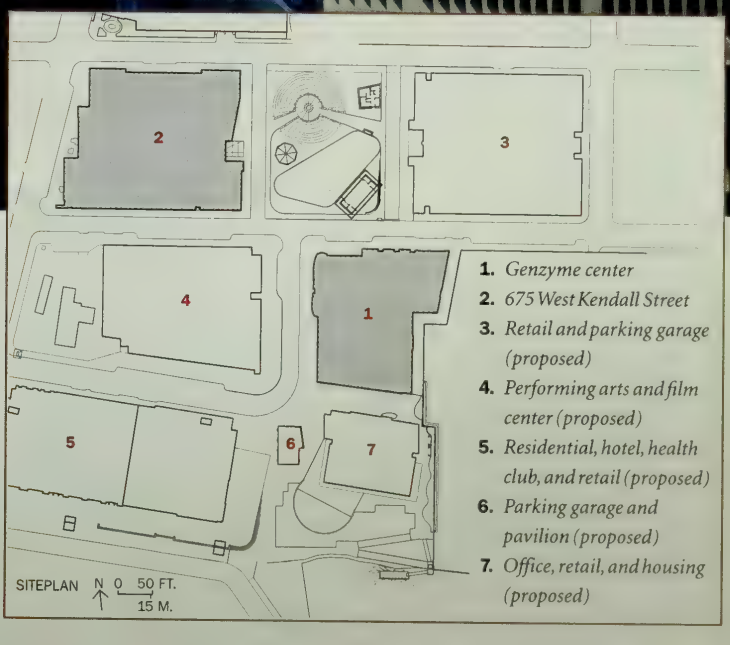
By Nancy Levinson

Cambridge, Massachusetts, home to the academic powerhouses of Harvard and MIT, is America's ultimate college town, and it has long attracted students and tourists alike with its leafy streets and historic buildings, its pedestrian-friendly squares and tranquil courtyards. But these days, the most dynamic part of this centuries-old city is the part that attracts few out-of-towners. These days, the most enlightened development and progressive architecture are to be found not in the postcard-pretty precincts but in old industrial East Cambridge, the zone of the city that declined in the postwar era as the factories shut down and that in recent years has been reborn as one of the country's leading biotechnology centers. A 10-acre case in point is Kendall Square, an ongoing project developed by New England–based Lyme Properties that will eventually encompass 1.3 million square feet in six buildings, and that has already produced two excellent works of contemporary architecture. This feat is all the more remarkable for taking place in a historicist town that lately has tended to reject any architectural expression newer than mid-Victorian.

Contributing editor Nancy Levinson is an architect and writer based in Cambridge, Mass.

The 10-acre Kendall Square, a biotech center in old industrial East Cambridge, rises in a zone of the city that declined in the postwar years as factories shut down but in recent years has been reborn as one of the country's leading research centers. An ongoing project developed by New England–based Lyme Properties, it will eventually encompass 1.3 million square feet in six buildings. The buildings shown here (opposite, at left) are the first two.





1. *Genzyme center*
2. *675 West Kendall Street*
3. *Retail and parking garage (proposed)*
4. *Performing arts and film center (proposed)*
5. *Residential, hotel, health club, and retail (proposed)*
6. *Parking garage and pavilion (proposed)*
7. *Office, retail, and housing (proposed)*

The Kendall Square project is that city-planning rarity—a private, for-profit initiative developed with a view toward long-range civic enhancement. David Clem, managing director of Lyme Properties, brought to the project not only experience in the business of real estate development but also deep engagement with the city—years ago he studied urban planning at MIT and even served as a city councillor. After purchasing the land in 1998, Lyme hired Toronto-based Urban Strategies to create a master plan for the unprepossessing site, a brownfield once occupied by a manufactured-gas plant. Together the developer and urban designer generated a plan that called for a program of mixed uses,



The Genzyme Building consists of 12 stories of sleek neo-Modernism, with a crisp glass-and-metal curtain wall. An energy-saving double facade sheathes almost 40 percent of the building. Roof-mounted mirrors, or heliostats, track the sun and reflect light into the interior.



and for the city grid to extend onto the site. Two classic urbanistic moves, of course, of the sort that elicit praise from critics and academics; but here, as is often the case, they were hardly the path of least resistance. In fact, they ran counter to years of prevailing practice. In the past two decades, much of East Cambridge has been developed as single-use superblocks, with assorted R&D towers set back from the street, encircled by well-tended lawns; it would have been easy to make Kendall Square an aloof biotechnology campus (an earlier development planned for the area was simply called "Cambridge Research Park"). What Lyme and Urban Strategies sought to do instead is to make the site, in the words of Ken Greenberg, a partner of Urban Strategies when the project started, "both a crossroads and a destination" for the district, which includes MIT to the south, the Charles River waterfront to the east, and a neighborhood of 19th-century row houses to the north. "We did not want the place to signal itself as a project, something separate from the city, with its own sidewalks, curbs, signage, and so on," says Clem. "We saw an opportunity to integrate the site into the city, and to activate the area with housing, entertainment, retail, and recreation." To these ends, the program includes two life-science laboratory buildings, a biotechnology headquarters, a performing arts center, an apartment tower with adjoining hotel, an office/residential low-rise, a public square alongside an old canal, and a public park with a skating rink. The buildings incor-

THE MOST ENLIGHTENED DEVELOPMENT AND PROGRESSIVE ARCHITECTURE ARE FOUND IN OLD INDUSTRIAL EAST CAMBRIDGE.

porate ground-level retail, and an underground garage accommodates more than 2,000 cars. None of this is standard-issue real estate development; nor was the process by which architects were chosen. Early on, Lyme decided that the buildings would be designed by different architects and that the architects would be selected through invited





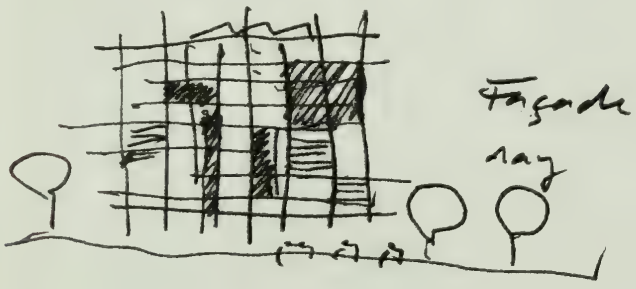
The architects organized the building in an open, flexible manner around a grand central atrium, which connects all the floors and brings daylight deep into the core.



FIRST FLOOR



TWELFTH FLOOR





international competitions. In this way the developer hoped to achieve a high design standard and also to encourage nonrevivalist architecture. "We wanted something more than the usual Cambridge formula of red brick and punched windows," says Clem.

So far, the competitions have yielded refreshingly nonformulaic results. Designed by Behnisch, Behnisch & Partner, of Stuttgart, the Genzyme Building, headquarters of the biotechnology giant, is 12 stories of sleek neo-Modernism, with its crisp glass-and-metal curtain wall and its uncluttered interiors filled with elegant midcentury furniture. What makes the building remarkable, though, is its thoroughgoing commitment to sustainable technology—a commitment shared by the developer and tenant as well as the architect, and enabled by an unusually collaborative design and construction process. Because Genzyme had signed on as tenant right from the start, building design and tenant fit-out occurred almost simultaneously, with green design understood not as something added on or attached afterward, but instead as integral to the design concept. "We designed the building from the inside out," says Stefan Behnisch, "not as an architectural







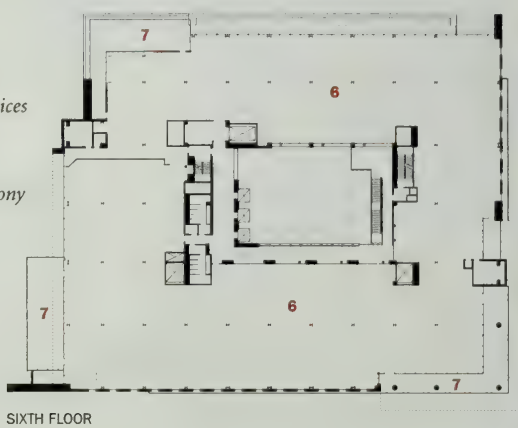


Many offices are located on the perimeter of the central atrium (above) to gain direct access to natural light. Interior cubicles are partially transparent to permit light to filter through (opposite). Interiors are uncluttered and filled with elegant midcentury furniture. Furniture and partitions can be used to create community areas, connecting paths, and private offices (left two).

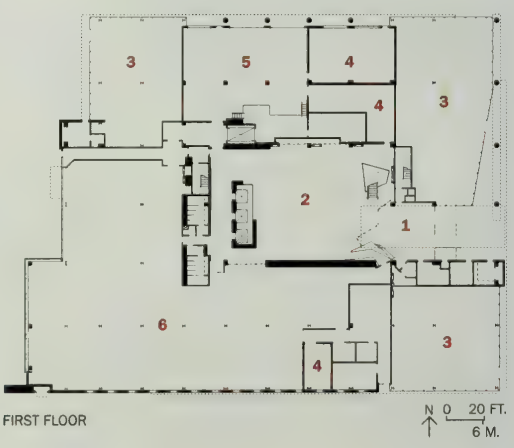




1. *Entry*
2. *Atrium*
3. *Retail*
4. *Building services*
5. *Loading*
6. *Lab/office*
7. *Exterior balcony*



SIXTH FLOOR



FIRST FLOOR

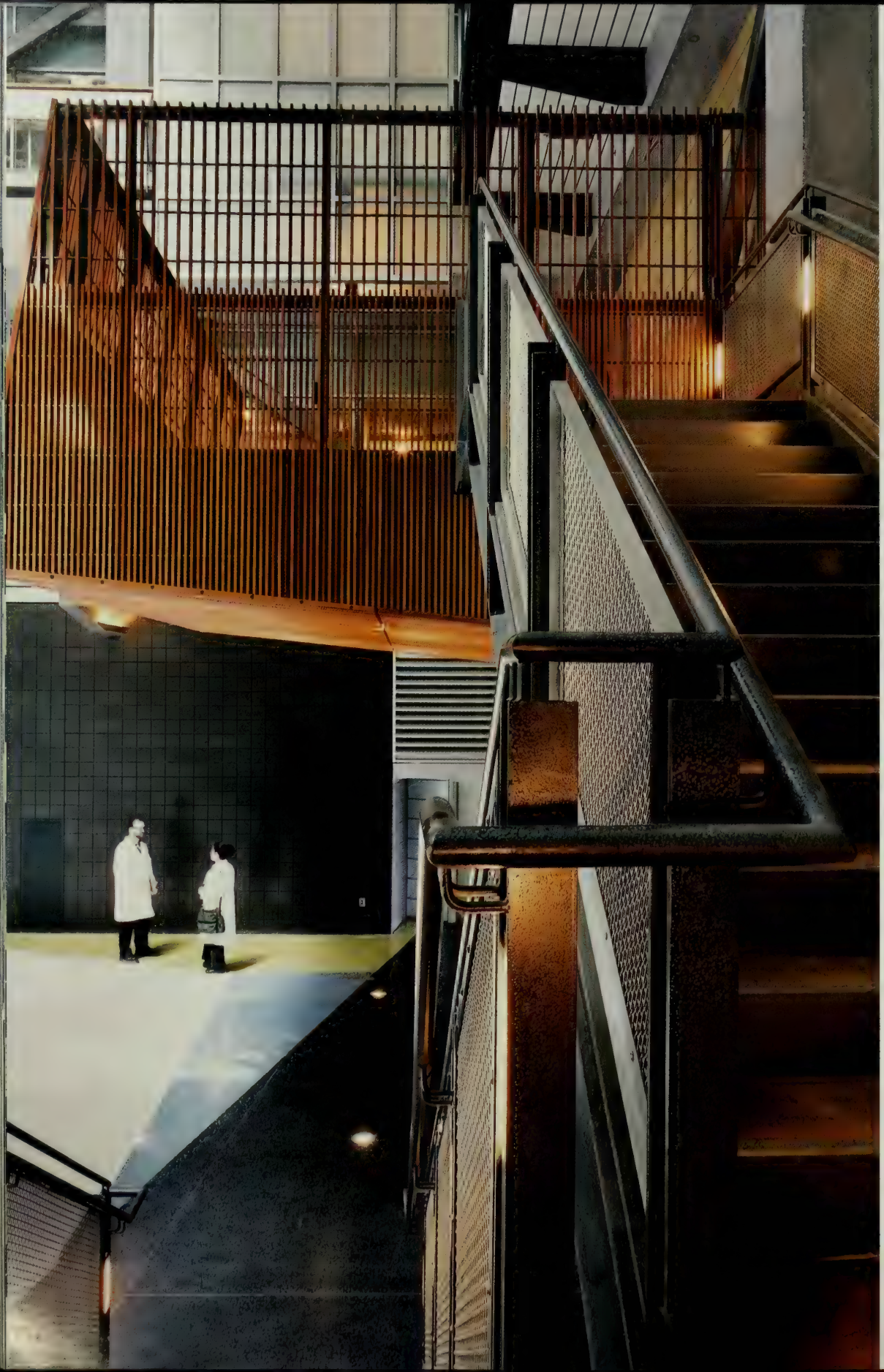
N 0 20 FT. 6 M.

icon but as a place to work." This approach resonated with Genzyme C.E.O. Henri Termeer, who describes it as "consistent with our commitment to innovative life-science technology. We didn't need a big sculptural statement, but a healthy workplace." And Termeer sees the green building systems as having economic as well as environmental benefits. "The reduced operating costs are an excellent return on our investment," he says. Some of the more impressive green features include a double facade that sheathes almost 40 percent of the building, the two skins separated by an accessible 4-foot loggia; a central atrium that organizes the building's interior and brings daylight deep into the core; roof-mounted mirrors, or heliostats, that track the sun and reflect light into the interior; a multistory "light chandelier" made of hundreds of prismatic glass plates that shimmer down the length of the atrium; and automated, operable blinds programmed to respond to light, weather, and orientation.

Like Genzyme, 675 West Kendall Street is rigorously contemporary—another welcome addition to the local scene. But while Genzyme is glassy and reflective, 675 West Kendall, designed by Steven Ehrlich Architects, of Los Angeles, is weighty and solid. The 300,000-square-foot, six-story life-sciences laboratory building is an elegant and artful composition, with the two-story mechanical penthouse—sized for chemistry and biology labs— not plopped on top but instead incorporated into the overall

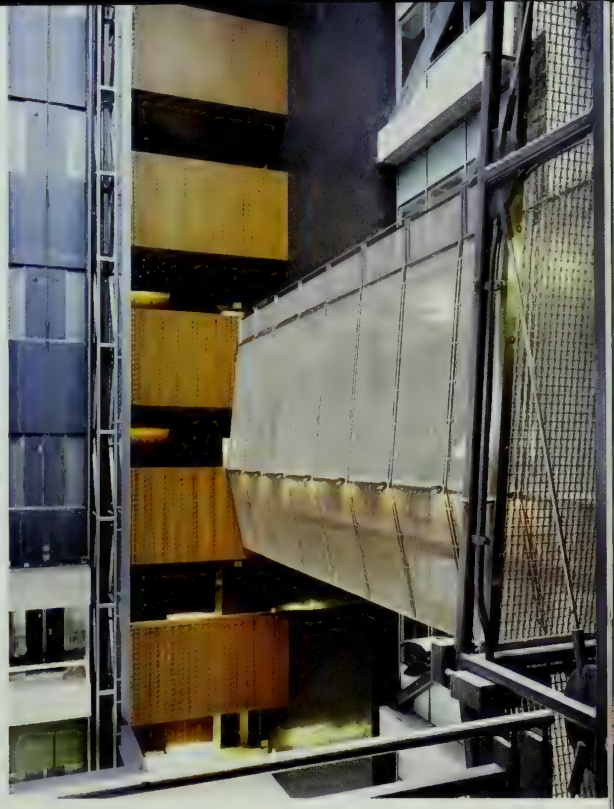


The facade features materials rarely used in U.S. construction, including channel-glass and terra-cotta panels, which discreetly evoke the masonry-and-glass industrial structures that once occupied the site.



Inside, the labs and offices are arranged around a 100-foot-tall atrium with skylights, as well as strategically placed heliostats (or roof-mounted mirrors) and reflective surfaces, which flood light into all corners of the building. Stairs, balconies, lounges, and overlooks animate this interior space. Glass and metal are the dominant materials. The ordinary concrete floor is tinted a deep brown. The aesthetic is industrial and crisp.





massing, and a large metal canopy, attached to the facade with mastlike struts, signaling both the main entrance below and a roof terrace above. And the facade features materials rarely used in U.S. construction, including channel glass and terra-cotta panels, which discreetly evoke the masonry-and-glass industrial structures that once occupied the site. "We didn't want to make a brick building," says Ehrlich, "but we did want to acknowledge the masonry tradition of Cambridge." Local culture is acknowledged in even subtler ways: The panels of the terra-cotta rain screen are imprinted with patterns derived from DNA molecules—a level of detail that will speak to the bioscientists who work in the building's laboratories. And 675 West Kendall, like Genzyme, is organized around a central atrium, which brings light into the core and creates zones for casual interaction. "As we go deeper into work on the screen, or in this case in the lab," say Ehrlich, "it seems more important than ever for architecture to create opportunities for the kind of chance, synergistic encounters that encourage creativity."

Genzyme and 675 West Kendall have set a high standard for the remaining projects, which are in various stages of development. Two are scheduled to start construction this fall: A 23-story residential tower, by CBT Architects of Boston, and a low-rise residential/office building, by Architects Alliance of Toronto. Early next year another life-sciences laboratory, by Anshen + Allen Los Angeles, will begin construction, along with a hotel, also by CBT. A multistage performing arts center by Stubbins Associates, scheduled to begin construction in late 2005, will be the last piece of Kendall Square. And here it should be pointed out that "Kendall Square" is the name not only of this ambitious project but also of the surrounding city district. Whether the developer is co-opting the place name for the benefit of the project or using municipal nomenclature in order to make the project blend seamlessly into the city is a matter of judgment. But certainly one measure of the success of the Kendall Square project will be whether it is perceived not as a neat and tidy development, but rather as a strong and vital addition to a district in transition. The two buildings already completed have gotten it off to a happy start. ■

Project: *Genzyme Center, Cambridge, Mass.*
Architect: *Behnisch, Behnisch & Partner—Stefan Behnisch, principal; Christof Jantzen, principal; Günther Schaller, partner (Venice, Calif.); Martin Werminghausen, partner; Maik Neumann, project architect (base building) (Stuttgart)*
Executive architect: *House & Robertson (base building); Next Phase Studios (tenant fit-out)*
Engineers: *Buro Happold (environmental consultancy, structural engineer, m/e/p); Laszlo Bodak (engineer of record, m/e/p); Bartenbach Lichtlabor GmbH (lighting)*
General contractor/construction manager: *Turner Construction*

Sources
Glass curtain wall: *Sota Glazing*
Photovoltaic panels: *Powerlight*
Skylights: *Architectural Skylight Company*
Office furniture: *Steelcase*
Lobby finishes: *Hanover Pavers*
Interior gardens: *Greenscape*
Water feature: *Carbone Metal Fabricators*
Carpet: *Miliken*

Project: *675 West Kendall Street, Cambridge, Mass.*
Design architect: *Steven Ehrlich Architects—Steven Ehrlich, FAIA, principal; Thomas Zahlten, principal in charge; Patricia Rhee, AIA, team captain; George Elian, designer; Aaron Torrence, AIA, Carine Jaussaud, Cedric Lombardo, Gregor Seeweg, Monika Russig, project team*
Associate architect: *Symmes Maini & McKee Associates—Thomas A. Coffman, AIA, Gordon Brewster, Henry S. Ricciuti, AIA, Eric A. Peterson, AIA, James E. Deitzer, AIA, Roger H. Comee, project team*
Engineers: *Arup (structural, m/e/p)*
Landscape architect: *Michael Van Valkenburgh Associates*

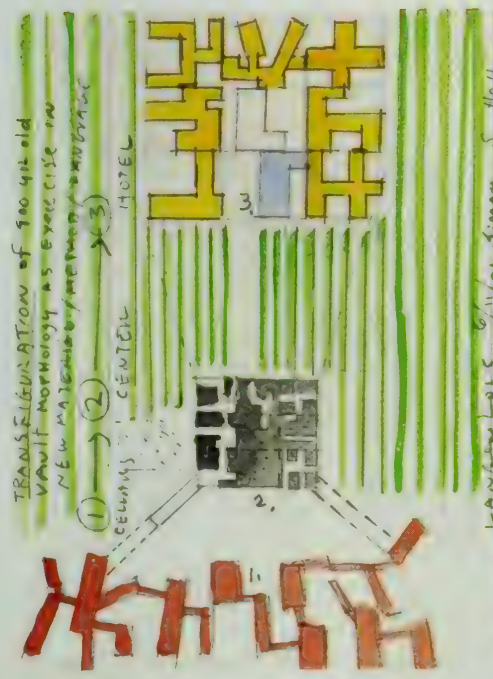
Sources
Exterior masonry: *E. Dillon & Co.*
Metal/glass curtain wall: *Kawneer*
Glazing and skylights: *Viracon; LinEl*
Hardware and hinges: *Sargent; Stanley*
Exterior terra-cotta: *Christian Pohl*

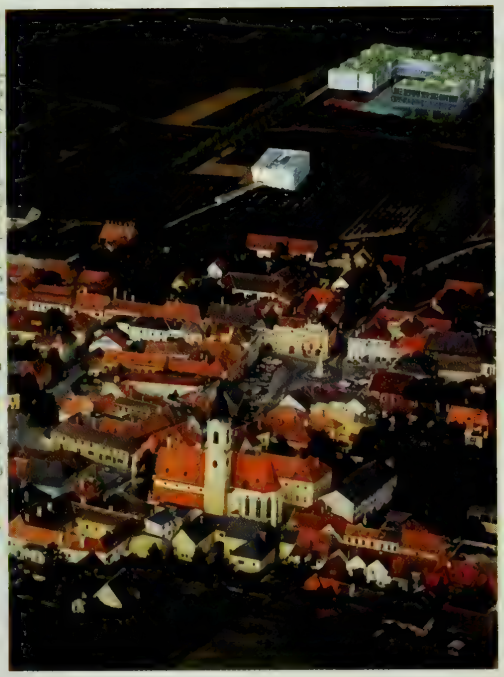
For more information on this project, go to Projects at **www.architecturalrecord.com.**

A reflecting pool (this page) extends over a tunnel connecting Holl's visitors' center with old wine vaults. His conceptual watercolor (opposite, left) and photomontage (opposite, right) show his visitors' center along with his future hotel (now under construction), the town, and the vineyards.



Steven **Holl** counters sprawl and pastiche with his **LOISIUM**, a tilting, aluminum-clad visitors' center that holds its own in Austrian wine country





By Liane Lefaivre

The small Austrian town of Langenlois nestles near the northwest end of the Wachau Valley—one of the world's only wine-growing regions officially classified as a Unesco World Heritage Site. No wonder: Its hilly landscape, dotted with castles and blanketed with vineyards, makes this countryside exceptionally beautiful, stretching from the Baroque monastery of Melk—the setting for Umberto Eco's *The Name of the Rose*—to the town of Krems along the gently winding Danube. In springtime, Langenlois's own Baroque buildings—stuccoed in powder blue, dusty rose, bright sienna, and pale green—stand amid a profusion of purple lilac bushes and century-old flowering chestnut trees, as if this were nothing out of the ordinary.

So would such a fairytale town welcome an industrial-looking, aluminum-clad visitors' center for a winery, with windows slashed into it as if by the sword of Zorro and walls dented as if by a colossal hammer? Clearly not a foregone conclusion. And now that Steven Holl's building stands on a hill overlooking the town—with his vineyard hotel under construction just a few yards up the slope—does it fit in? Well, in the view of a local taxi driver, "Of course it does."

The taxi driver has a point. On approach to the Langenlois winery from the surrounding areas, it becomes clear that the fairytale confection doesn't tell the whole story. In the exurban, once-bucolic peripheries, sprawl has cut loose. Austria tends to hold truer to its postcard image than most countries do, keeping any sort of rampant overgrowth relatively rare. But once the reins on architectural quality go slack, things can go as awry here as anywhere else, even if the language happens to be Tyrolean pastiche.

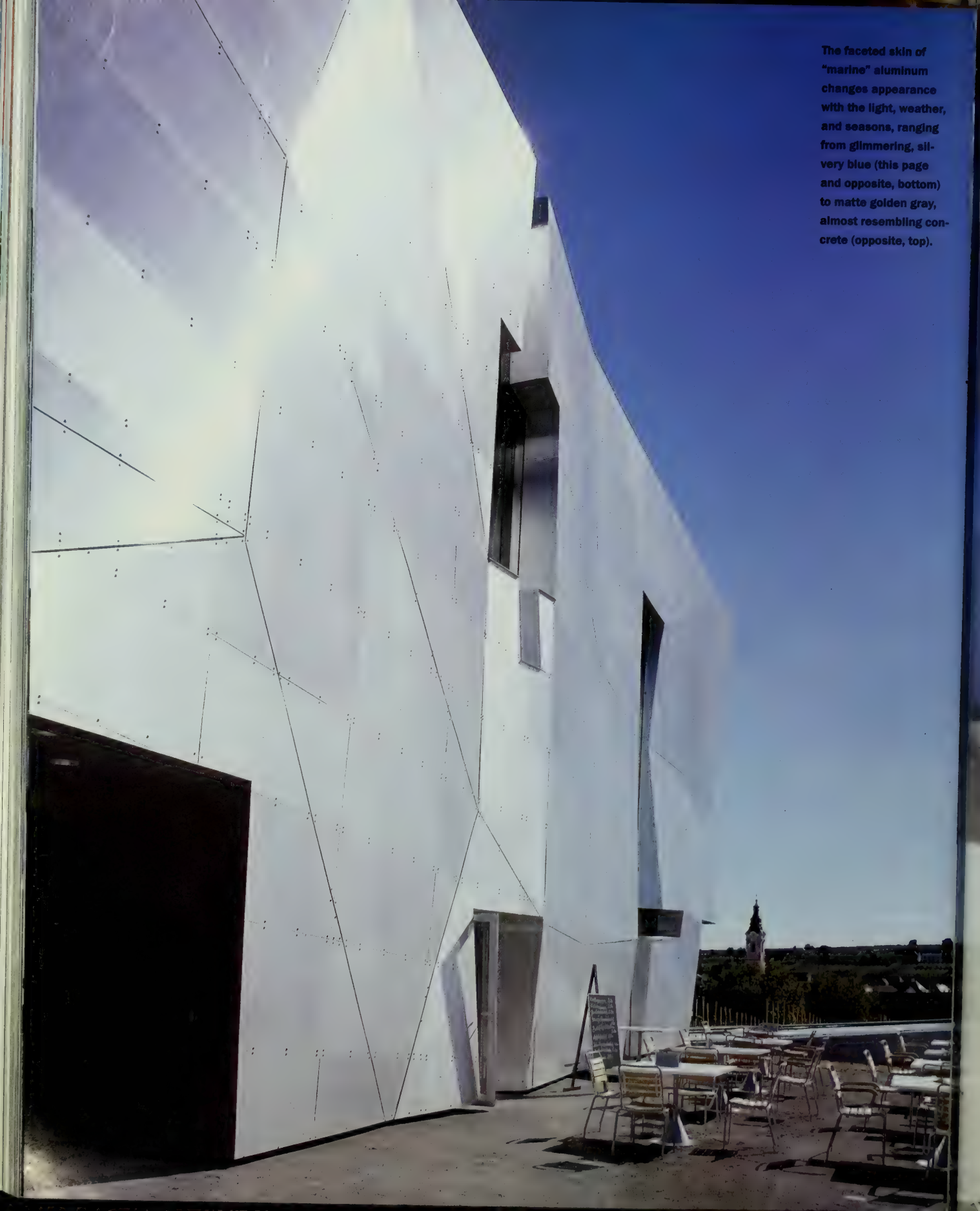
Such regionalist settings pose the inevitable dilemma: To hold on to tradition or let go and innovate? These days, more and more Austrian clients tend to opt for the latter, as in the city of Graz, which recently engaged architects Peter Cook and Colin Fournier to insert a bit of 1960s exuberance—their Kunsthaus [RECORD, June 2004, page 92]—within that Baroque town. The owners of the Loisium—a 13,000-square-foot visitor's center, named for the "lois" in Langenlois, with conference and wine-tasting facilities, a restaurant, and a wine shop—are no exception.

Barely an hour from Vienna yet so near to the Wachau Valley, Langenlois offers a dream location, commercially speaking. The clients clearly saw Holl's Modern, high-profile architecture as a potential spearhead for their campaign to fill the world's wineglasses with the region's high-quality, though still slightly obscure, white wines from the unpretentious, crisp Austrian Gruener Vetliner grape. Besides such global-scale branding, they also held ambitions to turn back the wave of sprawl and counter the loss of architectural quality.

Faced with this double challenge, Holl carved out a world apart from the kitsch vernacular, providing a strong, distinctive architecture, as

Liane Lefaivre is chair of architectural history and theory at the University of Applied Arts in Vienna and an associate of the Design Knowledge Systems Group at the Technical University of Delft.

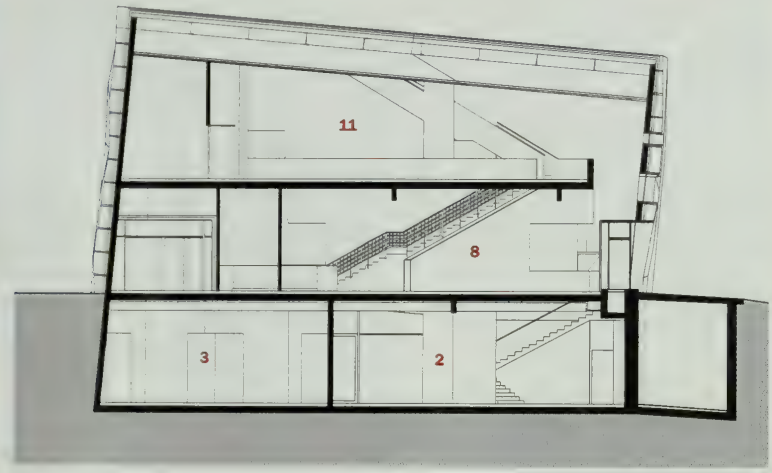
Project: *Loisium Visitors' Center, Langenlois, Austria*
Architect: *Steven Holl Architects—Steven Holl, design principal; Christian Wassmann, project architect; Martin Cox, Jason Frantzen, Brian Melcher, project team*
Collaborator: *Solange Fabião, artist*
Associate architect: *Arge Architekten*
Engineers: *Retter & Partner (civil); Altherm (mechanical)*



The faceted skin of "marine" aluminum changes appearance with the light, weather, and seasons, ranging from glimmering, silvery blue (this page and opposite, bottom) to matte golden gray, almost resembling concrete (opposite, top).







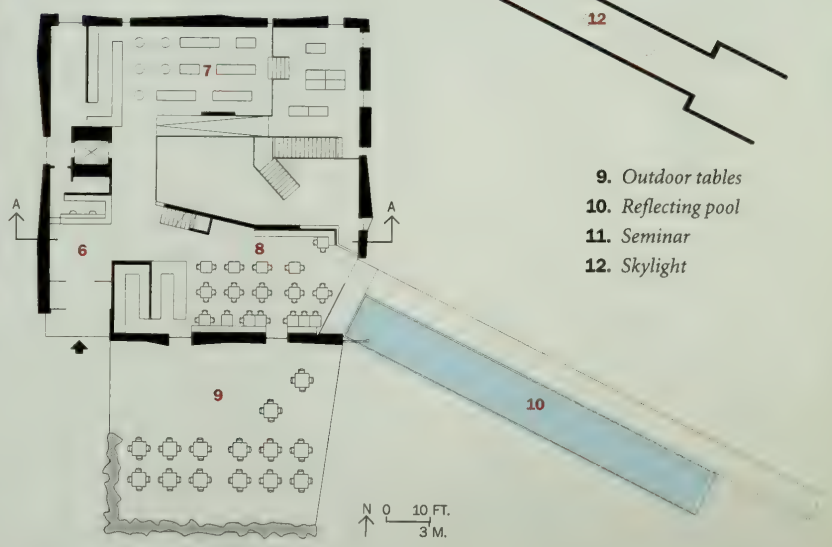
SECTION A-A

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BASEMENT

1. *Souvenir shop*
2. *Event space*
3. *Storage*
4. *Mechanical*
5. *Tunnel (to old wine vaults)*
6. *Lobby*
7. *Wine shop*
8. *Café*



FIRST FLOOR

9. *Outdoor tables*
10. *Reflecting pool*
11. *Seminar*
12. *Skylight*

The building tilts at a 5-degree angle, giving it an almost tipsy demeanor (above) and allowing for a smooth transition from the new visitors' spaces to the existing subterranean wine cellars, now connected by a tunnel (section, below) with skylights along its bottom. A short distance up the hill, Holl sited his winery hotel, currently under construction.

UNDER
Village
(Existing wine vaults)

IN
Winery Visitors' Center

OVER
(Future winery hotel
by Steven Holl Architects)

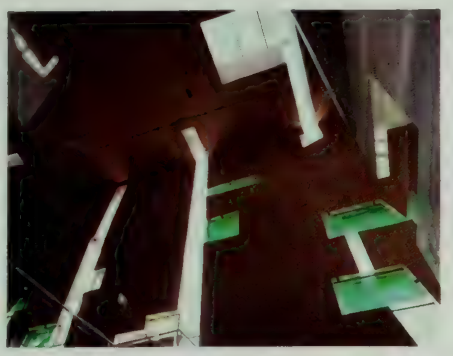


0 30 FT. 10 M.

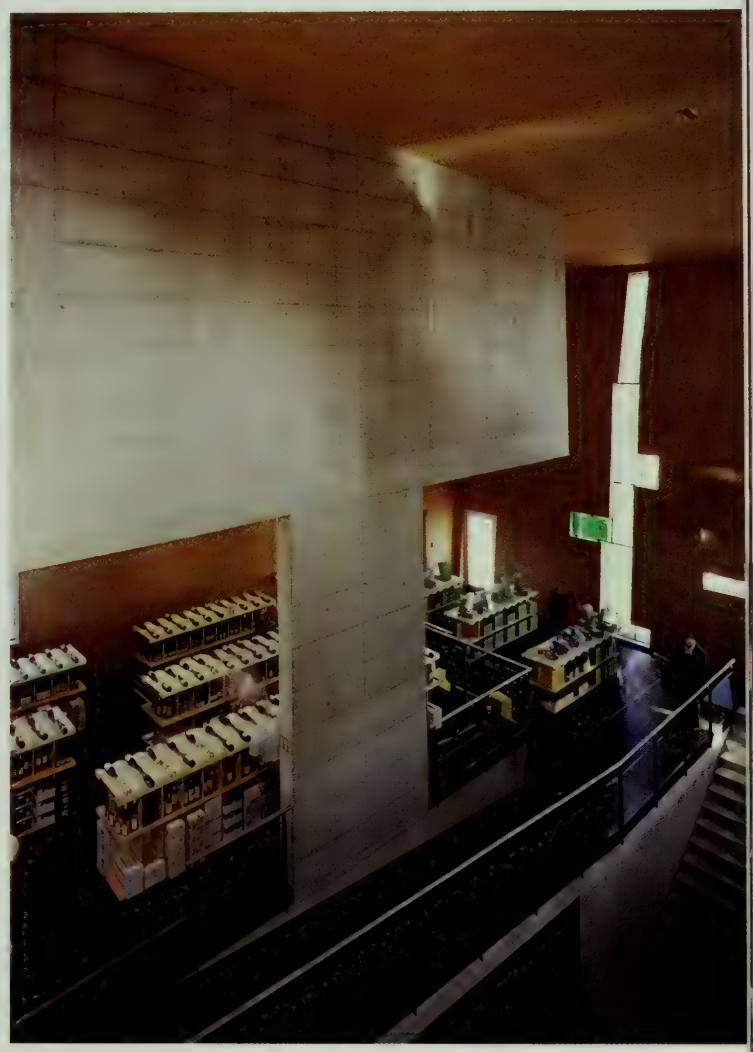


Daylight penetrates the irregular, slashlike windows, deeply recessed skylights, and swatches of green glass, animating the 82-foot-high interior and its exposed-concrete stair (this page).

The slotted windows cast rays of sunlight across the ceiling and walls, creating abstract and evolving compositions (right). The visitors' center includes a café (below) and a shop specializing in Langenlois wines (far right).







well as a logo-ready image. Fortunately, the solution goes as far as one can from the architectural equivalent of a yodel, offering instead a gleaming metallic cube, measuring approximately 82 feet on each edge. From the exterior, this building appears inward-looking. Composed primarily of reinforced concrete, its form stands beneath an insulating carapace of 0.16-inch-thick "marine" aluminum, an alloy that preserves its sheen.

Along with the bold geometry and glimmering skin, a striking playfulness distinguishes the structure from its architectural neighbors. The building tilts at a 5-degree angle, as if it were tipsy, allowing Holl to sink approximately one third of the cube into the ground and link it via tunnel, in an apparently effortless way, to a 900-year-old network of wine vaults, about 65 feet downhill from the cube. The tilt, giving the structure a subtle thrust of potential energy, was the suggestion of artist Solange Fabião, Holl's wife.

As the architect's earlier work has led us to expect—particularly his Ronchamp–inspired Chapel of St. Ignatius in Seattle [RECORD, July 1996, page 40]—the Loisium's interior contrasts markedly with life beyond its perimeter. The architect placed most of the major loads on the cube's exterior walls, freeing much of the interior. Just as Le Corbusier exploited open plans (*plans-libres*) with ramps and stairs placed at will to create architectural promenades, so too does Holl. Here, above the wine-tasting bar, which fills nearly half of the airy, expansive interior, the ceilings soar almost 82 feet, while an exposed-concrete staircase dominates the cube's other half.

Holl has used the narrow slashes of window quite ingeniously to bathe the main space in light while concealing views of the nondescript surroundings. The design further accentuates the sense of a world apart by placing the tunnel to the vaults and winemaking exhibition beneath a reflecting pool with watertight porthole windows on its bottom. Through water and glass, daylight penetrates the underground realm. The one unsubtle touch, however, appears in the wine-bottle-green glass in some of the apertures, reminding us that, yes, we are in a winery.

Linking old and new, Holl managed to insert a Modern and idiosyncratic structure into the periphery of a historic region. And perhaps because of his refusal to yield to the pressure of ersatz surroundings, his leaning, aluminum-clad cube seems right at home on the hillside, just above the lovely and quaint town of Langenlois. ■

Sources

Lighting: *Zumtobel Staff*
CAD system: *Auto CAD Vector Works*
Concrete: *Steiner & Strabag (cast in place)*
Structural steel: *Stahlbau Jordanits*
Aluminum: *Heinrich Renner (faceted facade); Kamper Stahlbau (doors and windows)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



The new archive addition is clad with limestone similar to that used in the original royal palace (far left in photo), but dressed without mortared joints. The massive, fortresslike structure, dating to the 12th century, sits on a high promontory above the Argo River (opposite, top), where it is surrounded by the densely built city of Pamplona (aerial, opposite).

Rafael **Moneo** has elegantly refashioned a stolid medieval palace in Navarra, Spain, into the **ROYAL AND GENERAL ARCHIVES OF PAMPLONA**

By Paula Deitz



In recent years, wanderers searching for the old royal palace in the streets of Pamplona, the capital of Spain's northern province of Navarra, could not have missed the stark remains of this original medieval structure. They would soon come upon its north and west buttressed walls joined by a corner tower keep with a gabled, chapel-like facade on the south. Out front, a large billboard announced the restoration and conversion of the palace into the Royal and General Archives of Navarra by the architect Rafael Moneo. As part of this process, careful demolition had removed additions dating from the 16th to the 19th centuries, when the building was the palace of governing Viceroys and then a military headquarters after Navarra was incorporated into Spain in 1833. Ultimately, the palace was abandoned as a ruin. Then in 1995, the Ministry of Culture decided to turn it into an archives and study center for the province.



Unlike more ornate Spanish castles of later periods, medieval architecture of the 12th and 13th centuries, particularly civil structures, possesses a robust simplicity of line. Its forms have inspired many contemporary architects, particularly Moneo, who was born in the Navarrois city of Tudela, south of Pamplona. And with the original quarries nearby still providing the same gold-beige and gray-mottled limestone used in the building's original construction (and which gives all of Pamplona its warm hues), Moneo had the opportunity to reimagine—and reinvent—a fortress. In this instance, he judiciously grasped the chance to renew the life of the old palace with public spaces—reading rooms, an exhibition gallery, an assembly hall—while designing a new tower for the storage and delivery of documents. An open courtyard with a colonnaded cloister functions as a transitional space that brings the two time frames into a seamless unity.

In many ways, the first impression of the palace from the far banks of the Argo River remains the same as it was in the early 13th century: a massive form perched on the city's highest promontory above the city's ramparts. The King of Navarra, Sancho VI, began construction of the royal fortress in 1189, but by 1198, his son gave it to the Bishop of Pamplona for his support in a war against Castile. Thus began a long tumultuous period when the kings often stayed in the same complex as the bishops of the Church.

Since the medieval walls were already extensively weakened by centuries of repair, Moneo opted to maintain the integrity and contour of the old building by wrapping the walls with masonry that would exactly preserve the building's silhouette. Using old limestone "bricks," some from the 12th century, workmen employed string guides to establish exterior lines and then applied lime mortar as infill. The tower keep became a stairwell plus lookout over the new copper roof and the narrow winding

Paula Deitz, editor of The Hudson Review, *is writing a book about a 13th-century king of Navarra. Her last article for* RECORD *appeared in February 2004.*

Project: *Royal and General Archives of Pamplona, Spain*
Owner: *Historic Patrimony Service of the Ministry of Culture of the Government of Navarra, Prince of Viana Institute*
Architect: *Rafael Moneo—Rafael Moneo, principal; Francisco Gonzáles Peiró, Christoph Schmid, Eduardo Miralles, Juan Rodriguez-Villa, Borja Pena, Jacobo Garcia-German, Fernando Iznaola, project team; Carla Bovio, Sebastián Guivernau, construction team*
Engineer: *NB35, Jesús Jiménez (structural); I y S Iturralde y Sagüés (mechanical)*
General contractor: *COPISA*



1. *Lecture hall*
2. *Library*
3. *Archive*



SECTION A-A

The front entrance leads into a grassy courtyard (right and opposite). Here, Moneo enclosed a majestically proportioned and simply executed colonnaded cloister (below) with glass and steel curtain walls. It unites the restored old 33,480-square-foot palace, in which the academic research center is located, with the archive space in the new, 129,600-square-foot tower.







BASEMENT LEVEL



GROUND FLOOR



FIRST FLOOR

1. *Vestibule*
2. *Early Gothic hall*
3. *Mechanical equipment*
4. *Archives*
5. *Entrance*
6. *Court*
7. *Entrance hall*
8. *Reading room*
9. *Conservation workshop*
10. *Lecture hall*
11. *Parking*
12. *Support services*
13. *Void*

The library occupies the gabled portion of the restored palace (opposite). In the basement, the early Gothic hall (bottom), with its dramatic tracery vaults, is now the exhibition space. A stair down to the lower level (below) illustrates Moneo's poetic handling of materials and light.







streets of the city.

Inside, the medieval stonework has been maintained in the door surrounds and in the partially visible tracery vault in the tower's entrance room. A 12th-century water cistern and the "S" mark of a mason of the period retains evidence of human hands. Fortunately, a hall in the Cistercian style, dating from the palace's original period and sunk cryptlike below ground level in the north wing, remains totally intact. Cited as the foremost example of early Gothic civil architecture in Navarra, the hall features six bays of square-section ribbed vaults that rise directly from the wall without supporting corbels or capitals. Lined with freestanding exhibition cases displaying old manuscripts, some ornately illuminated, it further anchors the archive to the past. A sunken esplanade around the entire complex allows light to flow diffusely into the depths of the lower-level spaces.

On the ground floor, the lecture hall faces the south wall in a space thought to be formerly occupied by the chapel. The library-related interiors are suffused with the warmth of the wood in the bookshelves, beamed ceilings, staircases, as well as the soft hues of terra-cotta and beige stone. Typical of Moneo, the work reflects his unfailing good taste for materials and textures that live well together.

In the new utilitarian sections of the building, mobile and compact bookcases in the stacks for the archival documents allow maximum storage. Devising a solution that any new library could well emulate, Moneo distanced the rooms from each other on eight levels to avoid extensive damage in case of fire. He arranged them around a central well where a ramp spirals squarely from top to bottom under a massive V of a skylight. It is easy to roll the research materials from place to place, thus eliminating dependence on the elevators. Moneo differentiated the texture of the contemporary walls from the old masonry by cladding the exterior of this storage tower and other new structures in the cluster with smooth slabs of mottled limestone minus the mortar.

In the entrance courtyard, the sleek glass-and-steel curtain-wall enclosure contrasts nicely with bulky stone columns tailored by chamfered corners and simply decorated capitals: Medieval rusticity is enhanced by elegant, streamlined technology. A gilded ceiling above the cloister radiates a royal light over this symbolic space. The main entrance door into the cloister, now reinstalled, was rebuilt in 1592 for a visit by Philip II. Mounted over its dropped arch is the escutcheon, not of the bishops, but of the Emperor Charles V—representative of the kings who lived there.

In a sense, designing the archives constitutes a second homecoming for Moneo, who designed a winery, Bodegas Julián Chivite, outside of Estella in Navarra in 2001 [RECORD, May 2003, page 256]. Like the archives, it represents a successful marriage of historic structures—a stone tower, a church, and a manor house—plus state-of-the-art winemaking sheds. Yet the Pamplona archives also provides another example of Moneo's acceptance of fragmentation in an urban setting. As he noted in a Harvard lecture in 1998, architecture serves "as a metaphor to describe the reality around us," and therefore architects should be guided by the history and spirit of the place in their designs. The Pamplona archives meets the additional challenge of preserving within the old palace walls the documented history of an ancient kingdom that has been absorbed into a modern country. ■

Sources

Stone: *Zubillaga*
Roofing: *Montajes Rosaz; Zubillaga*
Wood: *Carpintería José Rutia*
Steel: *Carpintería Metálica JG; Carpintería Metálica Tamoser*
Glazing: *Decovidrio; Crisesa*
Cabinetwork and custom wood: *Carpintería Paco Blasco*
Paints and stains: *Decoraciones Olite*
Plaster, partitions, and insulation: *Tabiven*
Floor and wall tile: *Cerámicas Navagres; Revestimientos Vitoria 96*
Floor covering: *Suelos Sal; Stonecoat*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



The Brown Center's angular form sprang from an odd-shaped, tightly bound site (opposite). At night, its fritted-glass skin cloaks the interior in milky white (bottom). The cant of the volume along Mount Royal Avenue (right in top photo) nods to MICA's last new structure, the 1907 Main Building.

The razor-sharp Modernism of **Ziger/Snead** and Charles **Brickbauer** befits a new program for the 21st century at the **BROWN CENTER** of the Maryland Institute College of Art

By Deborah Snoonian, P.E.



Planners in the mid-Atlantic region like to kick around a dreary term, "the Baltimore-Washington corridor," that robs each city of its unique character. But architecturally speaking, there's reason to consider the two as one: They boast many revered buildings designed in traditional styles, and only a few Modern structures dot their cityscapes. Much of Baltimore's better contemporary architecture was built by local firm Peterson and Brickbauer, which was dissolved in 1994 when the principals neared retirement age. A year later, loath to hang up his credentials, architect Charles Brickbauer, AIA, joined Baltimore firm Ziger/Snead as a design consultant. The team's boldly angular Brown Center at the Maryland Institute College of Art (MICA), completed last January, is quite simply the finest Modern building erected in Baltimore or Washington since I.M. Pei's East Building of the National Gallery of Art made headlines in 1978.

This crystalline eye candy is no mere bauble for Charm City. Flexibility and functionality transcend, thankfully, the mere razzle-dazzle of form. It's the first newly built academic structure at the 178-year-old art school in nearly a century, when the Great Baltimore Fire of 1904 destroyed MICA's downtown campus and forced a move north to Bolton Hill, a brick-row-house neighborhood. With classrooms and production spaces for MICA's growing digital-arts program, along with a 550-seat auditorium, the building has both anchored a growing campus and become a prominent civic destination for lectures and performances.

MICA's presence along Mount Royal Avenue was once so low-key that visitors often drove past the campus before realizing they'd arrived. In 2000, as part of a master plan that calls for nearly doubling the size of the school's physical plant, planners Ayers Saint Gross called for a signature building across from the 1907 Renaissance Revival Main Building. Fred Lazarus, MICA's president, began discussing the project with Brickbauer, a longtime acquaintance and Bolton Hill resident. Brickbauer and the Ziger/Snead team presented a study model to MICA's board of directors in spring 2001. It was met with round applause, and the project was named for board member and prominent local banker Eddie Brown, who donated $6 million toward its $20 million price tag.

The result is a cleanly limned form conceived from the site's dimensions and constraints. For months, Brickbauer walked the two blocks from his row house to the site, a parallelogram-shaped lot hemmed in by Mount Royal Avenue, the Fox Building (a former shoe factory converted to galleries and classrooms), and Howard Street. These visits were the key that eventually unlocked a rational geometric solution. "The last thing I do is design," says Brickbauer, an old-school Modernist in the mold of Philip Johnson, his former employer. "I need time to think first." He decided to echo the 62-degree angle of the site's parallelogram throughout the building, where its faces meet each other or rise from the ground. MICA president Lazarus, whom Brickbauer and partner Steve Ziger laud for his unflagging support of the design, appreciates the rigor of the firm's approach. "An architect that flies in to do a signature project can't possibly understand a site the way a local firm can," he says.

A simple four-story loft supported by concrete columns, the Brown Center is sheathed in a taut, fritted-glass skin bearing a pattern of tiny dots that evokes the pixels of computer screens. Its three angular volumes, comprising 61,000 square feet, read as a unified whole from inside. The southern volume, across from the Main Building, houses classrooms, production labs, offices, and small meeting rooms. The middle volume encloses a full-height atrium where students and faculty mingle. A narrow rectangular volume close to the Fox Building contains a fire stair and elevators. The auditorium is below them in the basement.

The architects pulled classrooms and production spaces away from the glazed envelope and wrapped them in circulation corridors, a layout that's smart in two ways. First, it prevents glare, anathema to digital

Project: *Brown Center, Maryland Institute College of Art, Baltimore*
Architect: *Ziger/Snead and Charles Brickbauer—Charles Brickbauer, design principal; Steve Ziger, partner in charge; Hugh McCormick, project architect; Craig Carbrey, Jeff Morgan, David Naill, Mark Treon, design team; Glenn Shrum, lighting design*
Engineers: *Morabito Consultants (structural); James Posey Associates (m/e/p)*
Consultants: *Enclos (curtain wall); Higgins Lazarus (landscape); D3cg (digital graphics); The Lighting Practice (lighting)*







A soaring atrium (above) is the heart and soul of MICA's new flagship building. Though hallways are often hung with paintings (opposite, top right), the building boasts high-tech accoutrements for digital art shows. On a sunny day, the facade appears almost opaque (opposite, bottom). Dramatic contours emerge from a vantage point parallel to the Howard Street Bridge (opposite, top left).

1. *Atrium*
2. *Auditorium*
3. *Classrooms, production, offices*



SECTION A-A

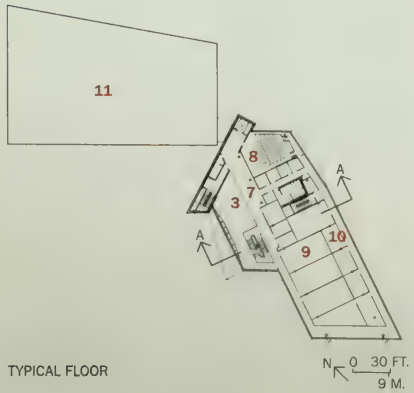
0 20 FT.
6 M.



The auditorium (left) has seen lots of activity; its stair and small lobby (opposite, top left) are popular gathering spots before events. Exposed ceilings and simple materials and furnishings create an airiness in meeting rooms with campus views (opposite, top right). Students can peer down into the lobby from corridors that encircle classrooms (opposite, bottom).



GROUND LEVEL



TYPICAL FLOOR

1. *Green space*
2. *Fountain*
3. *Atrium*
4. *Auditorium lobby*
5. *Auditorium*
6. *Loading dock*
7. *Gallery*
8. *Lecture hall*
9. *Classroom/ production*
10. *Office*
11. *Fox Building (existing)*

artists trying to preserve their eyesight. Second, it keeps students focused on their work while in class, yet lets them absorb information from their surroundings as they move through the building—the right balance for those learning to draw inspiration from external stimuli as well as the quieter voices of their own creative impulses.

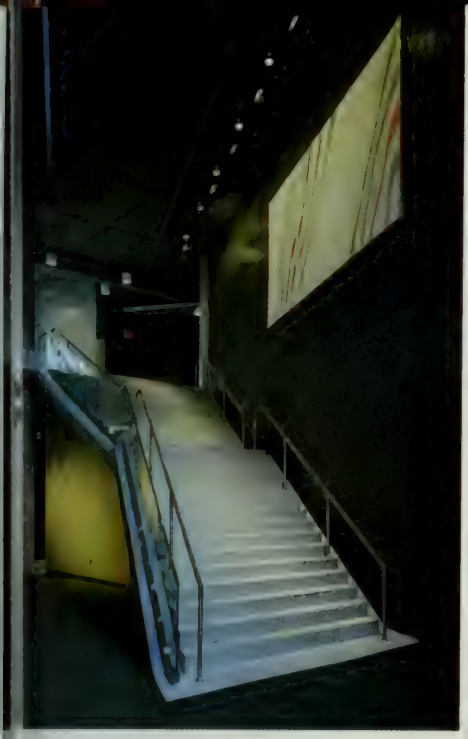
A dynamic interplay of form and material seduces visitors into attempting to capture its kinetic qualities. Put simply, the Brown Center plays tricks on the eyes. From some vantages, the raked angles appear either more or less steep than they actually are. The building's facade changes dramatically depending on the weather, angle of the sun, and time of day, morphing slowly from nearly opaque to transparent and ranging in color from a milky-greenish-white to a chameleon's palette of pink, green, gray, and blue. These pleasures are amplified by a level of workmanship that is uncommonly high for a project with a comparatively modest budget.

With enthusiasm and exactitude, the MICA community has embraced the building by creating installations that celebrate its particulars. One student tucked a chunky, brushed-metal sculpture into the handrail of the ceremonial stair that cascades down through the atrium. A spring exhibition made use of the facade's mullions as display space for strip-collages of American and British pop-culture icons. And just a month after it opened, faculty member Alexander Heilner fitted the interior lights with red gels and projected digital displays on the facade to mark the centennial of the Great Baltimore Fire. If the Brown Center—itself symbolic of a new era at MICA—can be so aptly used to commemorate the last big event that transformed this venerable art school, its staying power as a great building seems, well, indisputable. ■

Sources

Glazing, glass railings, glass entrances: *Harmon*
Plaza lighting: *Louis Poulsen*
Exterior lighting: *Hydrel; Bega*
Interior lighting: *Zumbotel Staff Lighting (general); Strand Lighting (performance)*
Laminate: *Wilsonart*
Carpet: *Monterey*
Paint: *Sherwin Williams*

For more information on this project, go to Projects at **www.architecturalrecord.com**.









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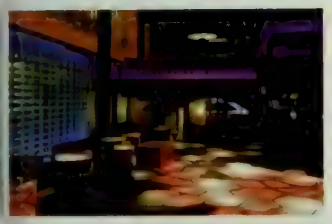
CHEFS AND OWNERS ARE LEARNING THAT PART OF THE RECIPE FOR SUCCESS LIES WITH ARCHITECTURAL DESIGNS THAT CAPTURE THE SPIRIT AND FLAVOR OF THEIR RESTAURANTS.



1.

New York City

Yasumichi Morita used an innovative palette of traditional and new materials to create the epitome of a stylish, modern Japanese restaurant.



2.

Gstaad, Switzerland

Parisian designer Patrick Jouin transformed an 18th-century chalet into an up-to-the-minute home for a pair of restaurants, a bar, and a disco.



3.

New York City

A Greek diner gets an extreme makeover from architect Philip Wu and starts a new life as a place chic enough for Sex and the City.



4.

Nagano, Japan

The clean lines and simple materials of this restaurant, by Kengo Kuma, provide a proper setting for pilgrims on their way to a Buddhist shrine.

For more information on these projects, go to Projects at www.architecturalrecord.com.

By Clifford A. Pearson

For most Americans, dining out means picking up something greasy and familiar and, quite often, eating it in the car. According to the market-research firm NPDFoodworld, three fourths of all restaurant-prepared meals in the U.S. fall into the take-out category, and 60 percent of these involve hamburgers or pizza. So much for ambience. But at the same time, fine dining is flourishing, rebounding from a sluggish period after the 9/11 attacks and the recent recession. According to a Zagat survey of New York restaurants (a bellweather for the upper end of the market), 32 percent of diners say they ate out more in 2003 than in 2001, and 53 percent say they spent more per meal. Nationwide, Americans age 8 or older eat 4.2 commercially prepared meals each week, up from 3.7 meals a week two decades ago, according to a report by the National Restaurant Association. That translates into 53.5 billion meals a year for the country.

As we eat out more often and spend more money on it, we are getting more demanding in terms of the dining experience: the food, service, and setting. While top chefs have become stars with their own TV shows, books, and food empires, all the attention has only made competition more intense. To make a splash or stay on top in the business today, chefs and owners need establishments that look great. Thinking strategically more than they ever did before, they're approaching restaurant design as an integral part of their businesses, something that must support and enhance the cuisine and, indeed, the entire project's identity.

The four restaurants in this Building Types Study range from a 16,000-square-foot dining and entertainment complex in a Swiss chalet to a 2,500-square-foot noodle place on the way to a Buddhist shrine in Japan. But all four demonstrate a keen sense of architecture working seamlessly with the culinary arts to create a coherent personality and image. Yasumichi Morita's theatrical design for Megu in New York City, for example, would be all wrong for the Soba Restaurant at Togakushi Shrine, but jives perfectly with restaurateur Koji Imai's concept of modern, super-hip Japanese dining. Similarly, Patrick Jouin's pulsating, witty design of Chlösterli expresses the sybaritic character of Alain Ducasse's food, but would clash horribly with the understated charm of Simpson Wong's Jefferson in Greenwich Village.

Developing an architecture that captures the flavor of a dining venue requires translating a menu into three dimensions. It means understanding the ambitions of chef and owner and knowing how to please the customer. In today's super-competitive dining market, it can mean the difference between success and failure. ■

Megu
New York City

1

YASUMICHI MORITA BRINGS HIS HIGH-ENERGY BRAND OF MODERN JAPANESE DESIGN TO AMERICA AND GIVES A SHOWSTOPPING PERFORMANCE.

By Clifford A. Pearson

Architect: *Kajima Associates*
Interior designer: *Glamorous Company—Yasumichi Morita, Satomi Hatanaka, Seiji Sakagami, project team*
Owner: *Koji Imai/Food Scope New York*
Engineers: *Hage Engineering (structural); CY Mills (m/e/p)*
Design consultant: *Hashimoto & Partners—Osamu Hashimoto, Sachiko M. Masaki, project team*
Consultants: *Kenji Ito (lighting); Shoji Tahara, SKS Scott Kirk/Carlo Fornerino (acoustical)*
Construction supervisor: *Toshi Enterprise*
General contractor: *Kudos Construction*

Size: *14,000 square feet*
Completion date: *March 2004*

Sources
Cabinetwork and woodwork: *Cmack Construction*
Wall and floor tiles: *Seto Seikei*
Chairs: *Lef*
Vinyl leather upholstery: *Sincol*

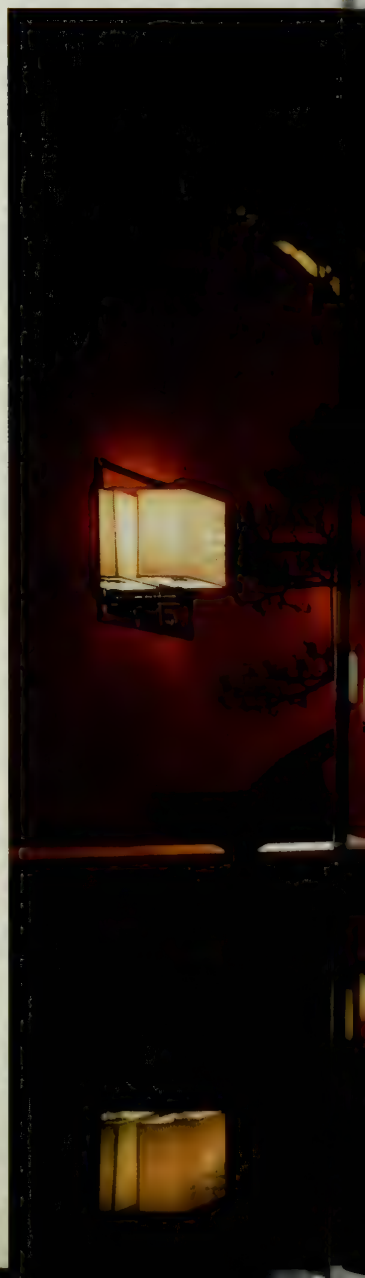
For more information on this project, go to Projects at **www.architecturalrecord.com.**

When Megu opened in Tribeca this March, it made a big splash on the New York restaurant scene. The food, the service, the design, and the prices are all larger-than-life, as if made for the silver screen. Rocco DiSpirito's one-year-old restaurant on 22nd Street might be reality TV, but Megu is a Technicolor fantasy.

If your idea of Japanese restaurants was shaped by the blond woods and graceful counters of small sushi bars, Megu will come as a shock. There's nothing quiet about this place, from the waitstaff yelling "*Irasshaimase*!" (welcome) as you arrive in the dining room to the bold colors and unorthodox mixing of materials all over the two-story establishment. Call it Modern Japanese Baroque. The design certainly matches the food, which includes such showy dishes as Kobe beef cooked at the table on sizzling hot rocks and salmon-and-toro tartare with a mound of wasabi-soy mousse that's melted in front of your eyes by a waiter holding a red-hot iron poker.

The man behind Megu is Koji Imai, a 35-year-old entrepreneur who has 30 restaurants in Japan. With Megu, his first foray into the American market, Imai hopes to kick-start a run of restaurants in New York and perhaps other parts of the U.S. To lead the design team for his American flagship, Imai hired





Rising sun: A Japanese flag made of porcelain sake bottles stacked on rice bowls grabs attention from the street (opposite, left) and separates the entry foyer from the stair leading down to the dining room (right). At the landing, a grid of sake labels works as art (far right). In the bar, the designer used kimono fabric in rolls on two walls and spread out on the overhead light (below).







Yasumichi Morita, a young Osaka-based designer who had worked with him on Maimon, a restaurant that opened in Tokyo's Shinjuku district in 2002.

Program

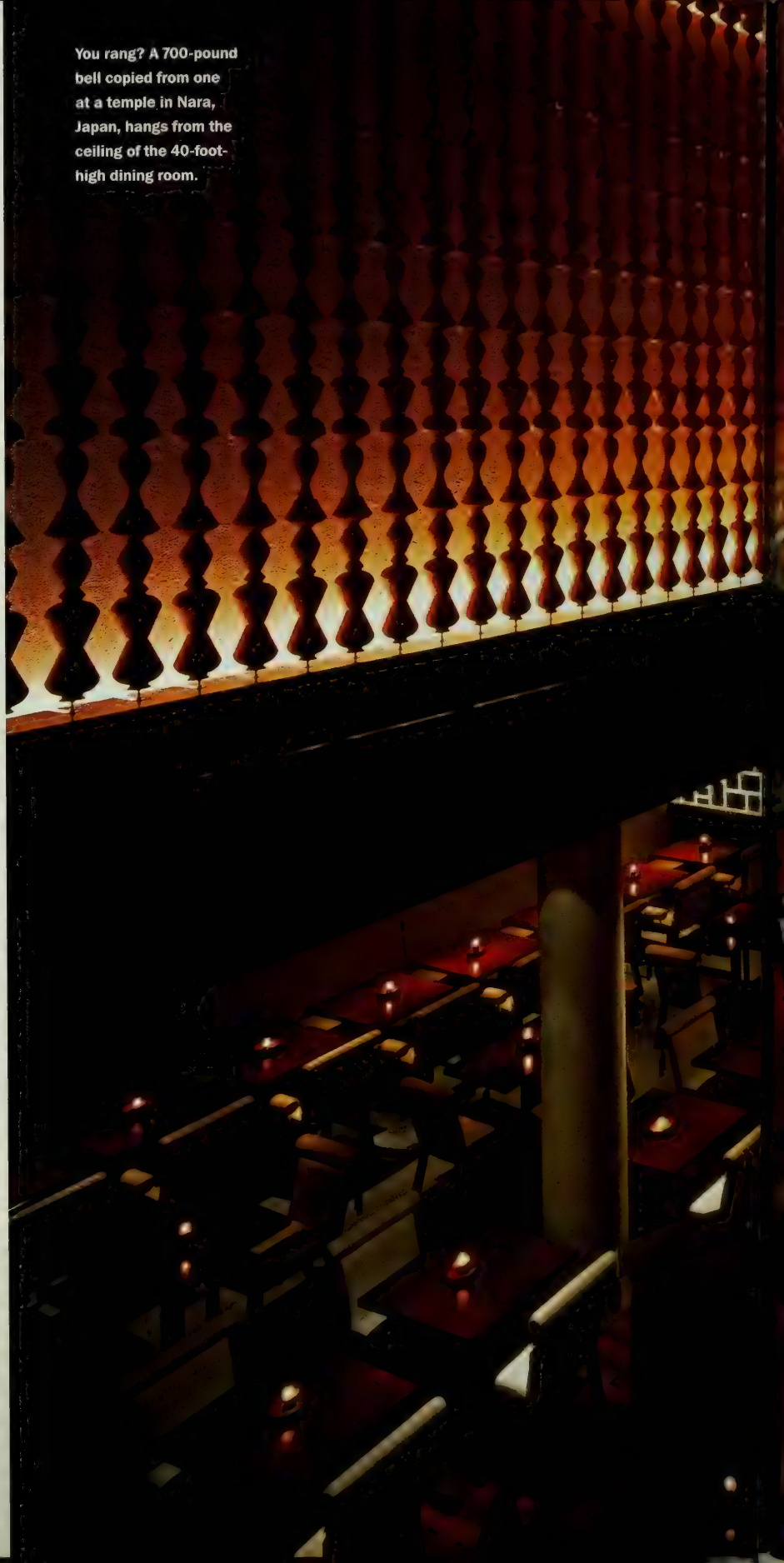
Part of a new generation of supersize restaurants opening in Manhattan, Megu sprawls over 14,000 square feet and includes a vermilion-colored "Kimono Bar," an "Imperial Lounge" overlooking the dining room, a small VIP lounge originally conceived as a smoking room, a sushi bar, and a private dining room adjacent to the kitchen, in addition to the 200-seat main dining room. The restaurant occupies the ground floor of a 19th-century cast-iron building and flows into the basement level as well.

Solution

"Because Megu is so big, we designed it as a series of different scenes," explains Morita. The action begins on the sidewalk, where guests can see a backlit, mosaiclike wall in the foyer emblazoned with a red Japanese sun in the center. Closer inspection reveals the wall to be made of porcelain sake bottles and rice bowls stacked one atop the other so they form columns. Like the first shot of a well-crafted movie, the entry wall provides important clues about what comes next. Reinterpreting icons of Japanese culture and using old materials in strikingly new ways turn out to be key themes tying together Megu's conspicuous displays of imagination.

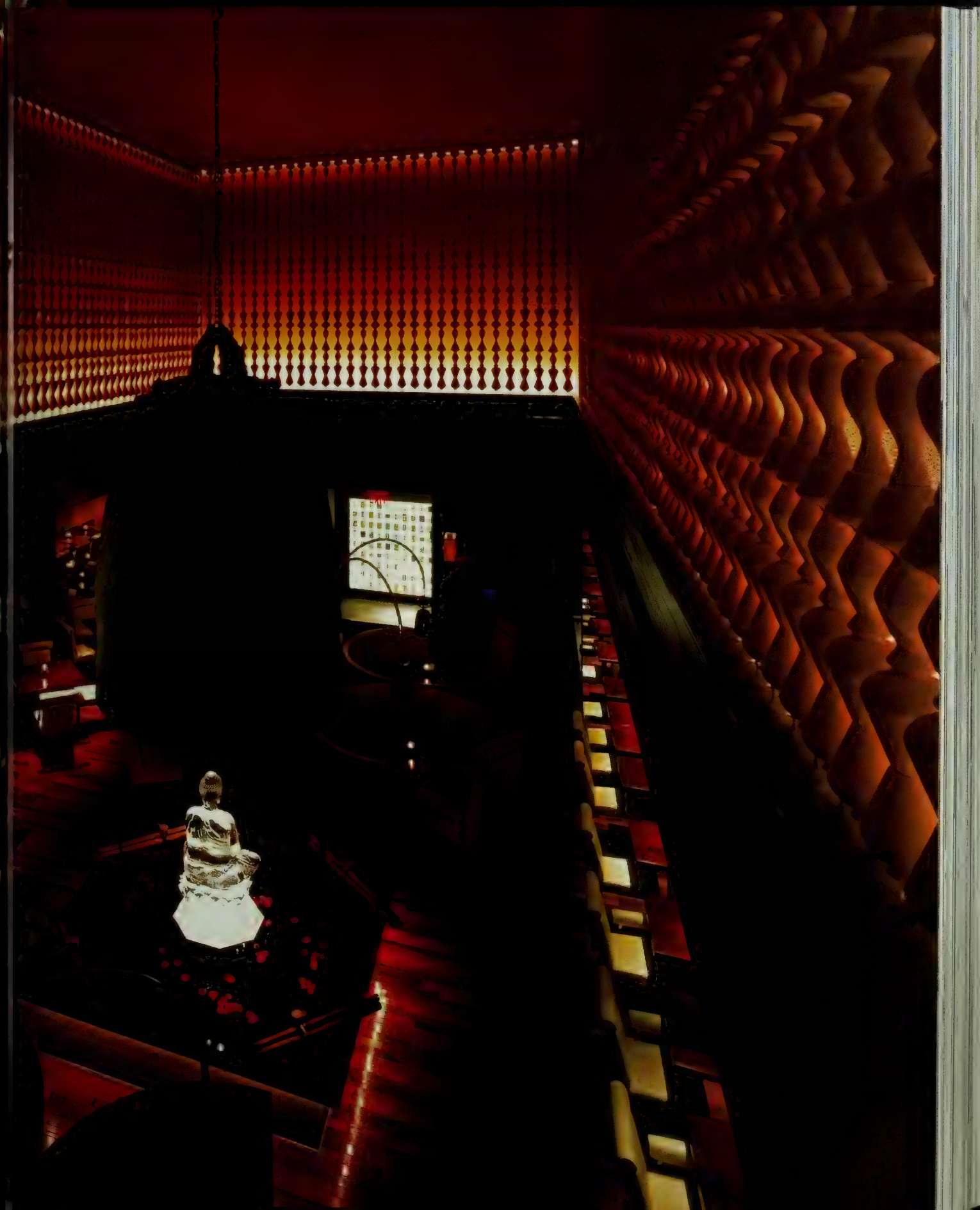
After the porcelain bottle-and-bowl wall, the first full dramatic scene happens in the bar, where rolls of kimono fabric line two walls, and squares of the same fabric form a kind of quilt stretched over a long light box above the bartenders. Morita used mirrors and the room's vibrant Chinese red to crank up the impact of the luxurious kimono material, creating a dazzling, almost kaleidoscopic effect even before customers order their drinks.

The designer skillfully alternated action scenes with quiet moments, such as the lounge just

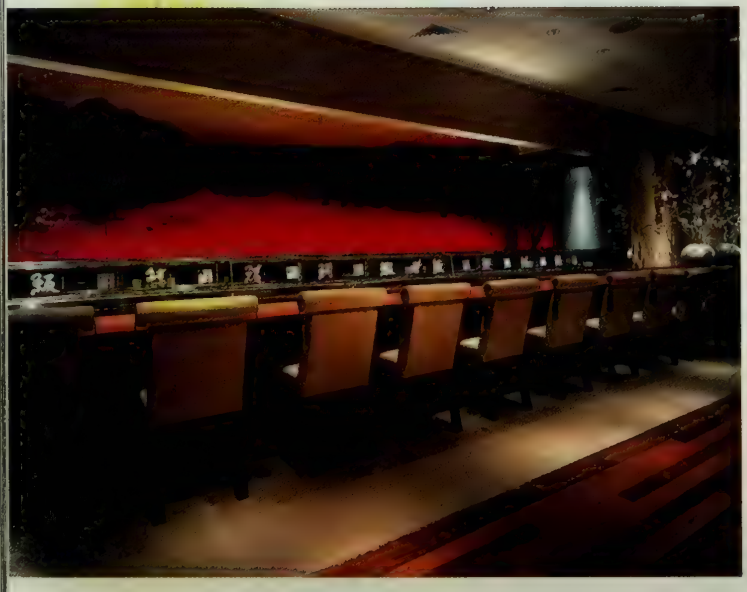


You rang? A 700-pound bell copied from one at a temple in Nara, Japan, hangs from the ceiling of the 40-foot-high dining room.

PHOTOGRAPHY: © NACASA & PARTNERS









beyond the bar, where beige mercedes leather and tall curving banquettes set a relaxed tone. He also choreographed the experience of moving through the restaurant; for example, directing customers down a paired set of narrow stone stairs, so the double-height dining room looks even bigger when they arrive at their tables.

At almost every turn, Morita found yet another ingenious way of treating familiar materials. On the way to the restrooms, customers walk past a wall of Japanese matchbook covers set into glass. At the stair landing, they can admire a grid of sake labels attached to curving plastic mounts and lit from behind. In the dining room, the designer created a checkerboard of bamboo mats on one wall, and on the opposite side he glued thin rectangles of stone on glass so they seem to float in an old masonry pattern.

Holding center stage in the dining room is a giant, 700-pound bell, a facsimile of a much heavier one at a temple in Nara, Japan. Sitting below is a Buddha ice sculpture, slowly melting into a pool decorated with floating hibiscus leaves. Bordering on kitsch, the bell and Buddha serve as a visual anchor to the large dining hall.

Commentary

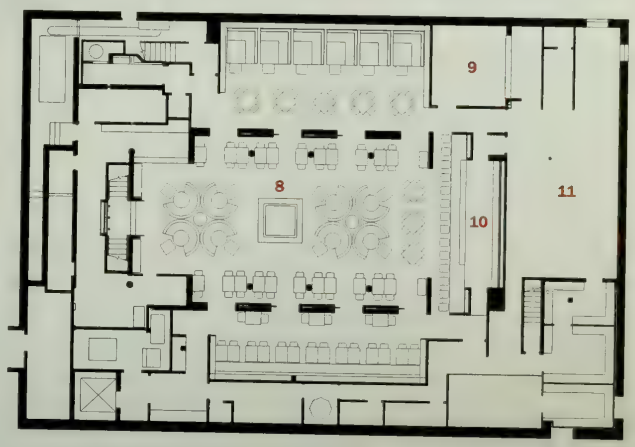
Moving beyond stereotyped images of geishas and samurai, Morita and his client have translated Japanese culture into an architectural language understood by New Yorkers. Tactile, bold, and inventive, their restaurant engages diners in a cinematic experience that unfolds as one moves from one space to another. "Megu is not just for eating," says Morita. "It is also entertainment." That it is.

At a time when people jet around the globe and images bounce instantly from one continent to another, Megu offers a high-energy interpretation of modern Japan by a Japanese artist for an American audience. Is it authentic? Does it make any difference? It's show biz. ■





GROUND FLOOR



LOWER FLOOR

N← 0 10 FT. 3 M.

Never-ending cycle: Every day a new ice Buddha must be made (opposite, top). The sushi bar features a colorful image of Nara printed on glass (opposite, bottom left). For the west wall of the dining room, Morita glued stone on glass (opposite, bottom right). On the east, he created a warmer surface using bamboo mats (above).

1. *Entry hall*
2. *Reception*
3. *Coat check*
4. *Bar*
5. *Lounge*
6. *Pantry*
7. *VIP lounge*
8. *Dining*
9. *Private dining*
10. *Sushi bar*
11. *Kitchen*

Chlösterli
Gstaad, Switzerland

2 **PATRICK JOUIN TURNS AN ALPINE CHALET INTO A CHIC DINING AND ENTERTAINMENT VENUE FOR EUROPE'S JET-SETTERS.**

By Philip Jodidio

Designer: *Patrick Jouin—Patrick Jouin, Laurent Janvier, Tomoko Anyoji, Sanjit Manku, Tania Cohen*
Architect: *Robert Stutz*
Client: *Michel Pastor, Delphine Pastor*
Consultants: *Hervé Descottes (lighting); Philippe David (graphics)*
General contractor: *Michel and Delphine Pastor*

Size: *16,000 square feet, including two 1,100-square-foot dining areas, a 1,600-square-foot dining terrace, and an 850-square-foot discotheque*
Completion date: *December 2003*

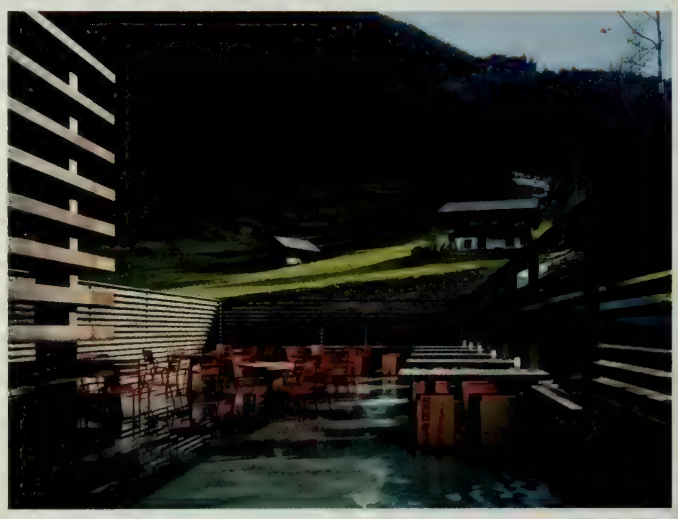
Sources
Video fireplace: *Souvenirs from the Earth*
Wood terrace tables: *Michel Poupion*
Terrace chairs: *Fermob*
Armchairs in bar: *Cassina Contract*
Spoon chairs: *Cassina France*
Lighting: *SES Giraudon*
Stone paving: *Christian Messerli*
Wood flooring: *Müller-Hirschi*
Wine wall: *Chambrair*
Metal joinery: *Metalbau Stoller*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

Set in a 300-year-old chalet on the main road into the Swiss mountain resort of Gstaad, Chlösterli blends tradition, modernity, and a sense of humor. The chalet, built by the monks of Rougemont Abbey, had been converted into a restaurant and pizzeria before the Monaco developer Michel Pastor bought it. Pastor and the chef Alain Ducasse called on Paris designer Patrick Jouin to breathe new life into the dark wood structure. Jouin, who also worked with Ducasse on the Plaza Athenée Restaurant in Paris as well as Mix in New York City, is a 37-year-old who had been in charge of furniture and product design for Philippe Starck before starting his own firm in 1998.

Working within strict guidelines on what is the oldest wood building in the village, Jouin cleaned and restored the chalet's facades. The most visible intervention outside the building is a new, 1,600-square-foot terrace for summer dining made of Iroko wood and concrete. Subtle variations in the placement of slats in the wood enclosure surrounding the elevated terrace allow diners to take in the bucolic mountain setting.

Program
Ducasse's plan called for not one but two restaurants: a traditional Swiss dining venue on the ground floor and, above that, Spoon des Neiges, one of seven Spoon locations around the world. (Jouin designed the Spoon Byblos in Saint Tropez, which opened in 2002.) Ducasse also operates acclaimed restaurants in Paris, Monaco, and New York, and châteaux and hotels in France. Busy guy.

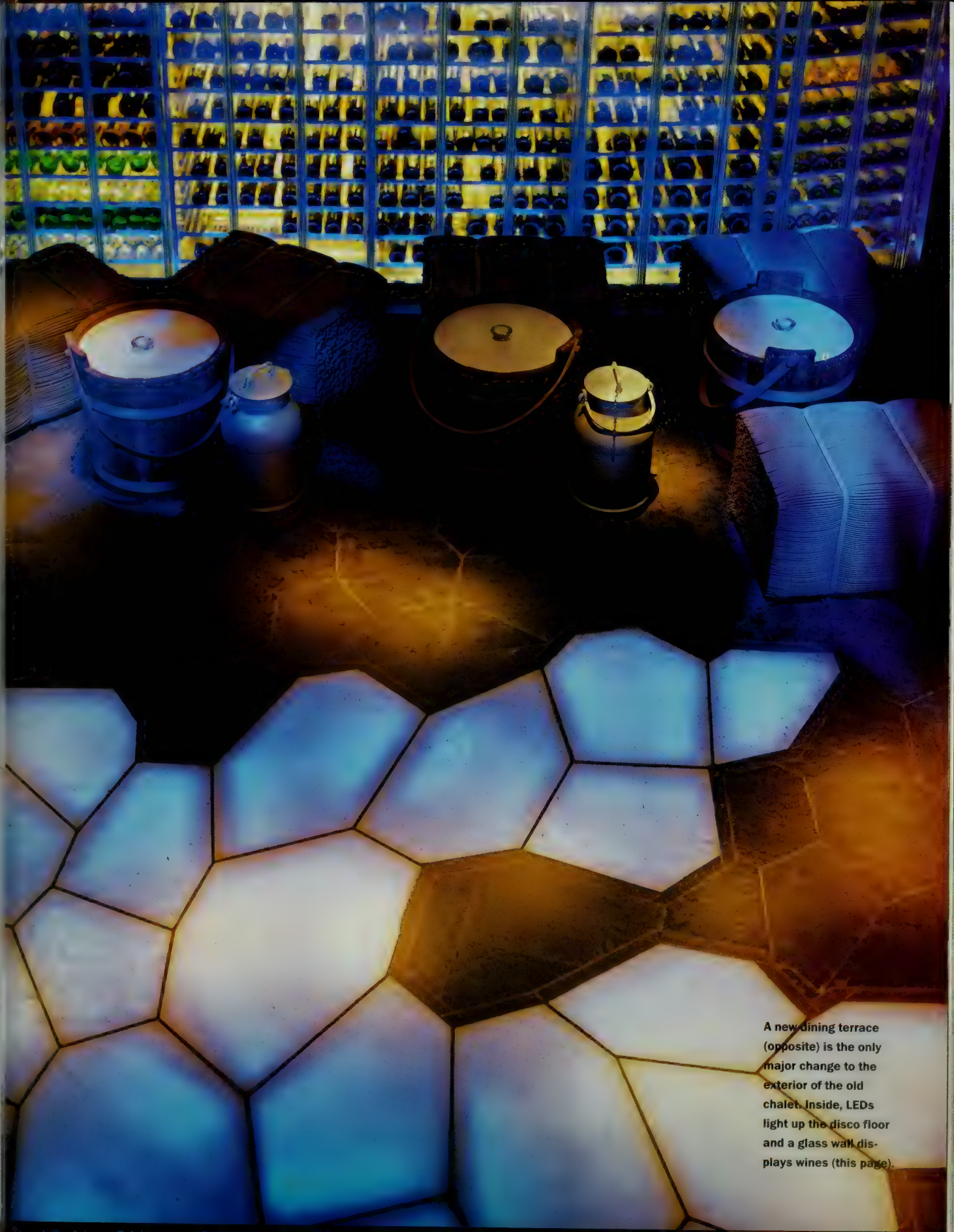


Each of the restaurants at Chlösterli has its own 2,250-square-foot kitchen serving a dining area of less than 1,100 square feet. Targeted to a wealthy clientele, Chlösterli includes an 850-square-foot discotheque on the ground floor.

Solution
Using the chalet's dark-wood interior as an aesthetic baseline, Jouin applied an unexpected mixture of modernity and tongue-in-cheek respect for Swiss tradition. Diners in the ground-floor restaurant see relatively little of the project's contemporary personality, entering the dining room from discreet, streetside doors and eating in a room where slate floors and oak paneling set the tone. Jouin reworked traditional oak chairs with saddlelike leather seats, gently tweaking convention. (Jouin designed all of the project's furniture and light fixtures.)

The two-story-high disco is the most spectacular departure from the usual Alpine experience. Scottish slate on the floor gives way to resin blocks lit from below by a LED system that pumps vibrant and changing colors into the space. A 17-foot-high glass wall divides the disco from the kitchen and serves as a giant, transparent wine rack. Jouin played on the incongruous presence

Philip Jodidio is a Paris-based journalist who writes about architecture.



A new dining terrace (opposite) is the only major change to the exterior of the old chalet. Inside, LEDs light up the disco floor and a glass wall displays wines (this page).







of international sophistication in a traditional farming area by designing tables in the shape of old wine buckets and wood seats that are wry updates of vernacular prototypes.

Two cramped stairways, recalling the chalet's rural origins, take diners up to Spoon, where a sleek, Modern aesthetic asserts itself. In the bar, a "fireplace" made of plasma screens shows flickering images of the fire not allowed by local regulations. Metal-frame chairs slung with leather seats signal the more refined atmosphere on this floor, while a private dining area, nicknamed "the aquarium," offers views of the disco floor through a floor-to-ceiling glass wall. The second floor's entirely Modern vocabulary completes Jouin's sly transition from Switzerland's past to Gstaad's jet-setting present.

Commentary

Instead of denying or covering up the irony of a hip dining-and-partying venue in a house built by 18th-century monks, Jouin employed it as a design tool. Not wanting to erase the past but to play on it, he created a handsome and witty environment that takes diners on a spatial journey toward progressively more Modern settings and furnishings. Given the extremes involved, making this transition work without causing aesthetic gears to screech was no small task. Patrick Jouin pulls off the trick with cool panache, in the process bridging a gap of three centuries from timeworn wood to the pulsing beat of a discotheque. ■



SECOND FLOOR



GROUND FLOOR

1. *Bar*
2. *Discotheque*
3. *Entry*
4. *Traditional restaurant*
5. *Kitchen*
6. *Lounge*
7. *Spoon restaurant*
8. *Private dining*
9. *Office*
10. *Tunnel to terrace*

Tables imitating wine buckets (above) and blocky wood chairs (far right and opposite, top right) in the traditional restaurant are sly references to rural prototypes. A private dining room (right) overlooking the disco floor and Spoon restaurant (opposite, bottom) features sleeker, more Modern furnishings. A banquette in the traditional restaurant (opposite, top left) offers a cozy place to relax.





Jefferson
New York City

3

PHILIP WU MINES A WEALTH OF INVENTION FROM A MODEST BUDGET FOR A MINIMALIST RESTAURANT IN MANHATTAN SHOWCASING AMERICAN CUISINE.

By William Weathersby, Jr.

Architect: *Philip Wu Architect—Philip Wu, principal; Hitoshi Maehara*
Client: *Simpson Wong*
Consultants: *JKW Engineering (engineer); James Wai (interior)*
General contractor: *Level Construction*

Size: *1,500 square feet (dining, bar, kitchen, and bathroom); 1,000 square feet (basement storage and office)*
Cost: *$120 per square foot (including mechanical)*
Completion date: *January 2003*

Sources
Doors: *Blumcraft*
Acoustical ceiling: *Solaton Acoustical Tiles*
Wood flooring: *Pianeta Legno*
Lighting: *Osram*
Bar top: *Corian*
Bar stools: *ICF*
Chairs: *Crassevig*
Upholstery: *Knoll*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

There is more of a cultural melting pot behind Jefferson than its presidential-sounding name and New American cuisine would imply. Architect Philip Wu—Vietnamese-born, Hong Kong–raised, and Harvard-trained—has designed the handsome, 70-seat Greenwich Village eatery for chef/entrepreneur Simpson Wong, a Malaysian of Chinese ancestry who built his reputation with traditional Southeast Asian cooking at Cafe Asean, his other establishment, located several doors down the same block of West 10th Street. The site of Jefferson, meanwhile, is a former no-frills Greek diner within a 1960s storefront overlooking the colorful Jefferson Market Library designed by Calvert Vaux in 1877. Such a rich confluence of ingredients has yielded a serene space that appeals to connoisseurs of both fine dining and design. The Minimalist, loftlike interior may at first glance appear disarmingly simple, but on closer inspection unfolds as a carefully constructed collage of light, texture, and volume.

Program

When launching Jefferson, Wong, a self-taught chef who learned his craft preparing meals for his father's timber company in Malaysia, says he wanted to reach beyond the simpler fare of Cafe Asean to showcase a sophisticated vein of American cuisine that juxtaposes ingredients and cooking styles of East and West. Though not a die-hard Modernist, Wong says he turned to architect Wu to create a simpler, more refined backdrop than his earlier café, a colorful hodgepodge of rustic furnishings the entrepreneur had orchestrated himself.



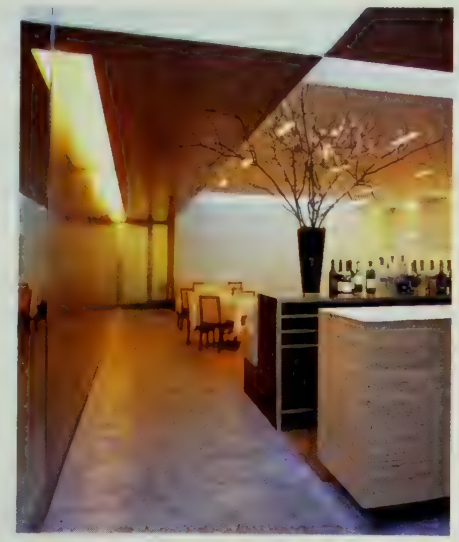
"Though we wanted a streamlined look for Jefferson, many of my design choices were a result of the existing conditions of the site and the conservative budget," Wu says. "Minimalism and restraint became virtues because of constraints."

Solution

Although the pedigree of the storefront brick-and-glass facade was of little interest in itself, Wu says, the building resides in a landmarked historic district, so major architectural changes were not allowed. Wu chose to extend the height of the single doorway, leaving the brick facade intact with scars from the removal of the former horizontal diner sign. Capitalizing on the three large windows overlooking the garden of the library across the street, Wu placed a lounge with banquette seating flush with the facade to "serve as the restaurant's calling card, instead of major signage."

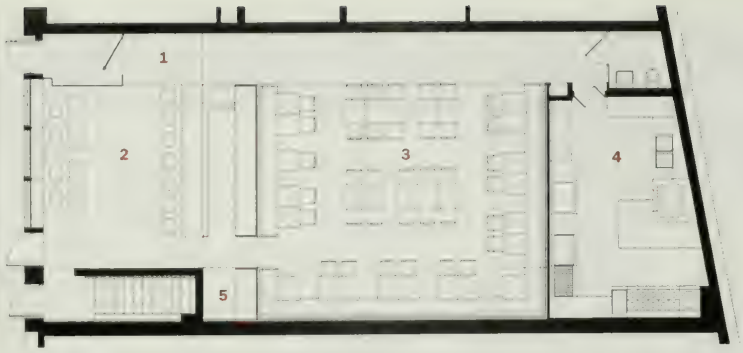
The interior of the restaurant is divided into four main spaces: vestibule, bar/lounge, dining, and service/kitchen. Inserting vertical planes would have blocked views of the garden from the dining room situated to the rear of the floor plan, so Wu employed varied ceiling heights, ranging from 10 feet, 4 inches to 12 feet, 9 inches, to demarcate discrete zones. The changing landscape of the ceiling plane—which features two new skylights (plus a third within the

The facade of Jefferson remains largely unchanged from its original storefront state, save for taller glass doors (opposite). A lounge area (below) is separated from the main dining space (far right) by a sculptural, stacked plywood bar topped by solid surfacing. The concrete flooring continues as a runway for patrons along an oak-paneled wall (near right).



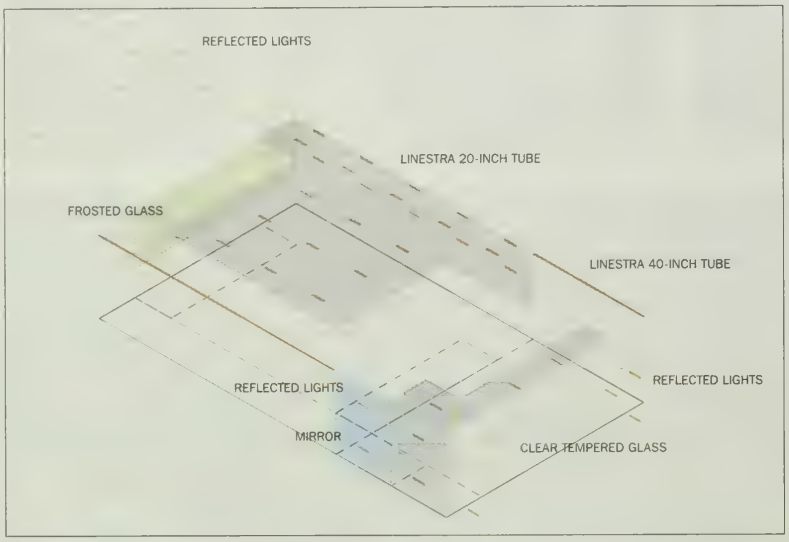






FLOOR PLAN

1. *Reception*
2. *Bar/lounge*
3. *Dining*
4. *Kitchen*
5. *Wait station*



The conceptual lighting diagram (left) shows Wu's layering of light from skylights and inset linear fixtures reflected by mirrored and glass panels.



small bathroom), becomes a subtle yet effective visual canopy above the interplay of diners and waitstaff.

Wu limited his palette to four main materials: concrete, wood, glass, and acoustical tile. A ribbed acoustical surface called Solaton clads half of the wall and ceiling surfaces. Typically used for office ceilings in Japan, its installation at Jefferson represents the product's debut in the U.S. "I searched for a material that could dampen noise but maintain a surface with sculptural interest," Wu says. The acoustical walls and ceiling are punctuated by an array of recessed linear light fixtures that are arranged asymmetrically as an artful visual motif.

The light-colored acoustical walls are complemented by quarter-sawn French white-oak flooring that rises up as paneling along one wall. "Again, the budget precluded a fine wood paneling, so I specified fairly standard oak and tried to use it in a different way." Similarly, the front bar is a sculptural rectangle of stacked layers of laminated plywood topped by solid surfacing in a demure taupe. Weathered concrete flooring rests underfoot in the lounge and along a "runway" leading from the entry, through the dining area, and back toward the kitchen.

Contrasting with the textures of the wood and acoustical tile, glass surfaces—in mirrored, frosted, and clear treatments—deftly expand sight lines and the volumetric character of the room.

Commentary

The blond interior palette may seem anemic until one discovers its enhancement by an arresting play of sunlight through skylights during the day, and ambient illumination in the evening. Furnishings—beige banquettes and cane-backed wood chairs—are quiet accompaniments. Wu says the restaurant is his response to "the noise and clutter" of many local eateries. Faced with Jefferson's visual and aural calm, diners discover that, like food, architecture stripped of excess can still be a thrill to the senses. ■



A new skylight along the rear wall of the dining room casts light on the frosted-glass panels set behind a long banquette. Asymmetrically placed linear light fixtures are an artful element dotting oak-paneled walls. The bar (opposite) is a sculptural divider in the loftlike space.

Soba Restaurant at Togakushi Shrine
Nagano, Japan

4

KENGO KUMA EXPLORES THE EXPRESSIVE POSSIBILITIES OF A SIMPLE STRUCTURE AND A RESTRAINED PALETTE OF MATERIALS.

By Clifford A. Pearson

Architect: *Kengo Kuma & Associates—Kengo Kuma, principal; Shuji Achiha, design associate*
Client: *Okusha Kaikan*
Engineer: *Oak Structural Design Office—Masato Araya, director*
Consultant: *National Matsushita Electrical Works (lighting)*
General contractor: *Chihiro-Kensetsu Corporation*

Size: *2,560 square feet*
Completion: *March 2003*

Sources:
Glazing: *Asahi Glass*
Entrances: *Nabco System*
Chairs: *Kagawa Mokkou*
Hanging light shades: *Inoue Takezaiku*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

The Togakushi Shrine in Japan's snowy highlands near Nagano draws both Buddhist pilgrims and tourists with its temples and dramatic natural setting. A 1-hour walk along a cedar-lined road leads visitors to Oku-Sha, one of three sanctuaries at the shrine. At the start of this road, Tokyo-based architect Kengo Kuma has created a humble but poetic restaurant serving a local specialty: the plain buckwheat noodles called soba.



Program

Asked to replace an existing restaurant that was falling apart, Kuma designed a one-story structure that is as straightforward and satisfying as the establishment's featured dish. The 2,560-square-foot building houses a one-room dining area, a kitchen with a long opening to the dining room, a small soba-fabrication room, and an enclosed terrace running the length of the structure.

Solution

Kuma has made a name for himself with projects that explore the nature of the materials they use, such as the Bamboo House outside of Beijing, the Stone Museum in Tochigi Prefecture, and the Hiroshige Ando Museum (also in Tochigi), which mesmerizes visitors with rhythmic rows of Japanese-cedar louvers. In the Soba Restaurant, he again employs a simple material—stained cedar—in a repetitive manner that heightens its impact. Used in conjunction with a steel frame and glass curtain wall, the red-cedar louvers form an abstracted forest surrounding diners inside the restaurant and connecting them to the real forest outside.

"I didn't want to make an object building that would spoil the natural spirit of Oku-Sha," says Kuma. "Rather, I wanted the architecture to become part of the approach to the shrine, to be a frame or path that exists between the subject and the object."

Using a gable roof with eaves that come low to the ground, the architect tried to make the building disappear in its wooded setting. Due to the large amount of snow that falls in this part of Japan every winter, the joists are 10-inch-deep timbers that make a strong impression overhead in the dining room.

From inside the restaurant, diners look through the enclosed terrace and a wall of cedar louvers whose top and bottom edges are obscured by the horizontal planes of the upper wall and floor. Kuma says he hid the edges of the louvers to blur the separation of the architecture from its surroundings. "I wanted to create one easy flow," he explains, "to de-emphasize the end and the beginning."

The tables and chairs in the restaurant, all made of stained white ash so they blend seamlessly with the floor and louvers, extend an austere aesthetic of material and visual continuity throughout the interior.

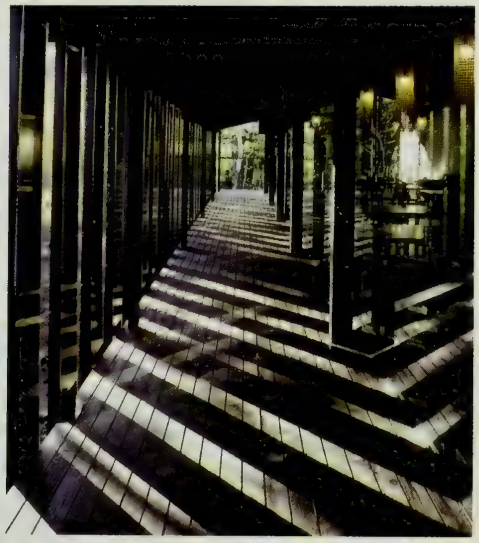
Hanging lamp shades wrapped around a row of plain light bulbs provide glowing accents to the space and add a necessary touch of visual warmth.

Commentary

Just as Zen masters teach the value

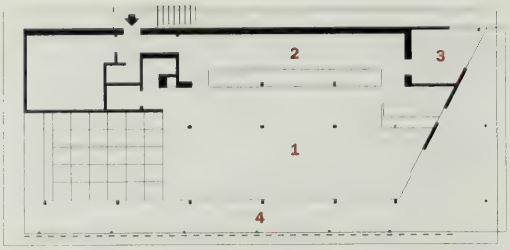
Raised above the ground and tucked below a gabled roof, the small restaurant is carefully inserted into its wooded setting (opposite). Wood louvers (right) and an enclosed terrace (far right) help connect the dining room (below) with the outdoors.



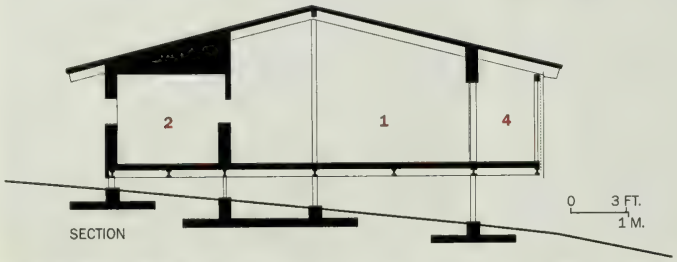




1. *Dining*
2. *Kitchen*
3. *Soba preparation*
4. *Terrace*



GROUND FLOOR



SECTION

In plan and section (above and left), the design emphasizes a repetitive system of wood and steel members. The decor extends this scheme (below).

and beauty of repetition, Soba Restaurant's straightforward steel frame and rhythmic spacing of wood louvers and glass planes express the quiet power of simple things done well, then done again and again. Light and shadow help bring the design alive, dancing among the tables and chairs and adding a sense of play within the rigid structural elements.

For visitors to the Togakushi Shrine, Kengo Kuma's restaurant provides just the right amount of caloric and emotional sustenance, enough to engage and please the senses without weighing them down for the rest of the journey. ■



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Defining Component-Based Design

ARCHITECTS ARE APPLYING SOPHISTICATED MANUFACTURING TECHNOLOGIES TO BUILDING DESIGN AND CONSTRUCTION AND DISCOVERING THE LOST ART OF QUALITY CRAFTSMANSHIP

By Barbara Knecht

Recent discussions about innovations in prefabrication and modular or unitized construction methods generally focus on the aesthetics and economics of the final product. The process, or rather processes, of reaching the end tend to be described generically, as if all programs can be addressed the same way. For example, a growing number of adventurous young architects have embraced prefabrication as a segue into the middle-class housing market [RECORD, December 2003, page 123]. Although they might be similarly motivated collectively, no two projects are realized using identical methods. Prefabrication and modular construction simply cover too many procedures. The terms also describe a range of building products, such as the production of structural insulated panels (SIPs) and exterior insulation and finish systems (EIFS), both of which are ubiquitous in commercial and residential building. And recently, prefabricated or unitized window units are emerging as an effective way to achieve high thermal performance with minimal tolerances in curtain walls [RECORD, May 2003, page 267].



The Seattle Central Library has a sophisticated curtain wall, which was pre-engineered off-site.

The real innovation these days can be found in the work of architects who have a great deal of knowledge about manufacturing technologies as well as conventional construction methods and through experience have found the interface between the two worlds. The projects here can be described as component-based design, a term that lacks the preconceived notions associated with *prefabrication* and *modular*, and one that describes the process that follows after the architect asks, How does this building want to be made?

Barbara Knecht is an architect and writer based in New York and Boston. She contributes to RECORD frequently on technology issues.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 160 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Define component-based construction.*
2. *Describe how components are used in buildings.*
3. *Explain why installing factory-built units is more efficient than building entirely on-site with raw materials.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **www.architecturalrecord.com**.

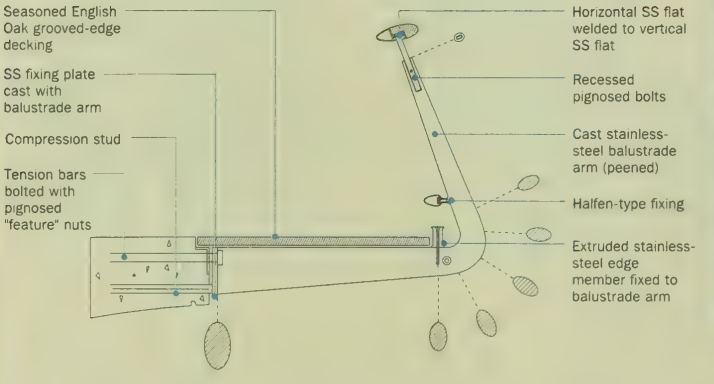
The case for component-based design

"The pace of change in materials in the 20th century was not so rapid," says Michael Stacey, principal of Manufacturing Architecture Practice in London. "There is nothing in contemporary polymer constructions that Charles and Ray Eames wouldn't be able to understand. What has changed is the architect's engagement with the process of making things." Concerned that architects have become disengaged with the materials and processes of architecture, Stacey has pushed the exploration of building components through practice and teaching.

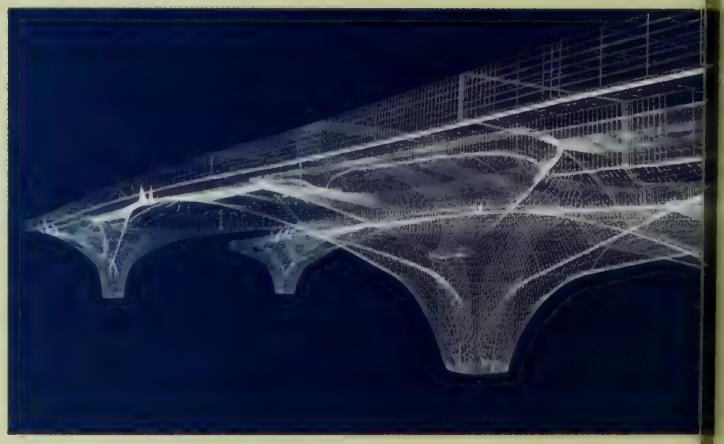
Components are, by one definition, units of something more than the sum of a set of individual elements of construction. Stacey sees component design as a deliberate process of thinking through the relationship between the overall intent of a project and the means for achieving it. A working knowledge of materials and their manufacturing process, combined with new tools for prototyping and modeling, is standard practice for him. "At the end of the 19th century, architects were the individuals expected to have the 'rounded' view of both structural and nonstructural materials, and they were the ones expected to make material design decisions. But by the end of the 20th century, compartmentalization of responsibilities was complete." In his treatise *Component*



Ballingdon Bridge by Brookes Stacey Randall has a complex geometry that required the architects to cut sections through the piers every 2 inches. The final form was tested by rapid prototyping at the University of Waterloo, Ontario, using 2D form delineation and 3D modeling. Precast-concrete units create the diagonal symmetry of the bridge. Six timber molds were required to produce 12 units of the bridge superstructure.



SECTION THROUGH LONGEST BALUSTRADE ARM AT MIDSPAN



Design (Architectural Press, 2001), Stacey attempts to renew the designer's relationship with the art of building. "With the wealth of materials at hand, and the vision of what they can do, the editing skills of an architect in making material design decisions is very important."

"Engineered" materials—metal and plastic extrusions, castings, formed sheet metal, composites, and glass—are the kinds of components that architects have given over to the engineers and manufacturers, making them the designers of the final visual effect, according to Stacey. The architect draws the idea, the engineer or the manufacturer determines what material it will be made of and how it will be put together. "The material sellers have created a kind of mythology that would have you believe the process of making a material is extremely complex, when it is almost always quite simple," Stacey observes. "It has to be simple or it can't be delivered routinely and cost effectively. Otherwise, it remains a theoretical material in the lab at MIT. We are able to sit down with the manufacturers and have a meaningful conversation that leads to the selection of the right materials with the right properties to make a better piece of architecture."

It is not the materials that are new. Aluminum has been around since 1807, glass since 4,000 B.C. It is the understanding of these components and the consideration of how they can be used together that opens up the design. In the East Croydon rail station in the south of England, Brookes Stacey Randall (Stacey was a founding partner) developed a glazing system with aluminum extrusions, toughened glass, and steel castings. The glazing

SELLERS HAVE CREATED A MYTHOLOGY THAT THE PROCESS OF MAKING A MATERIAL IS EXTREMELY COMPLEX.

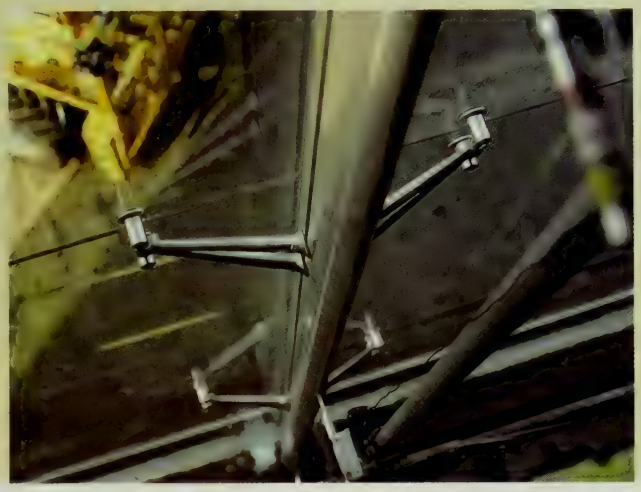
system lies below the spanning structure. The aluminum extrusion was designed with symmetrical grooves front and rear, identical but serving separate purposes: the front, to receive silicone gaskets that act as closures at wall junctions; the back, to hold signage, door tracks, and internal glazing.

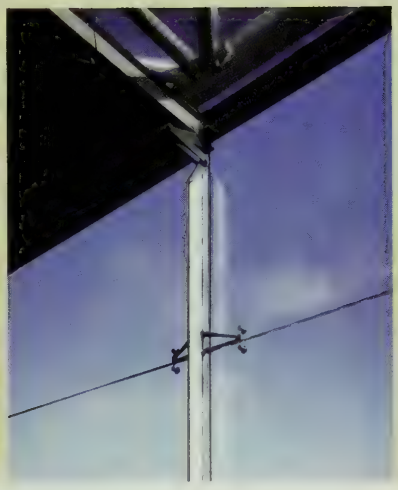
The use of stainless-steel castings at the head transforms the linear extrusions into a three-dimensional building component. Castings have





The operable skylight of this London apartment by Brookes Stacey Randall (left) is made of aluminum to reduce the load on the hydraulic openers. The section was manufactured off-site and lifted into place by a crane (far left).





Brookes Stacey Randall's East Croydon rail station's glazing system is based on anodized-aluminum extrusions. Each pane of toughened glass is supported at only four points (right). The mullions (far right) have front grooves to receive silicone gaskets and rear grooves to carry door tracks, signage, and internal glazing.

the advantage of making highly efficient use of materials with structural and geometrical requirements accommodated in a single component. Glass, in Stacey's words, "is perhaps the first building element to be self-evidently a component." It is a predetermined element of fixed size, with predictable performance and quality. Component design is characterized by a thorough thinking of the process of making and connecting materials for the best effect. A component is a single element or an assembly.

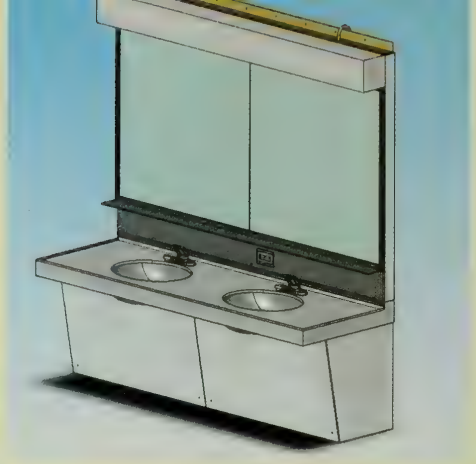
For the Art House, a private residence in London, Brookes Stacey Randall proposed using a glass stair for openness, light, and simple beauty. The London code has no provision for a glass stair. New material applications can be stymied by recalcitrant building officials, but the architects discussed the concept with the building control officer, and together they worked out how to maintain the desired visual effect and to give the officer confidence that it would achieve the intent of the code. A series of tests were performed to verify performance, and the contractor chose to witness the test to better understand what he was being asked to build. The process emulated an integrated 19th-century building team using 21st-century materials and methods.

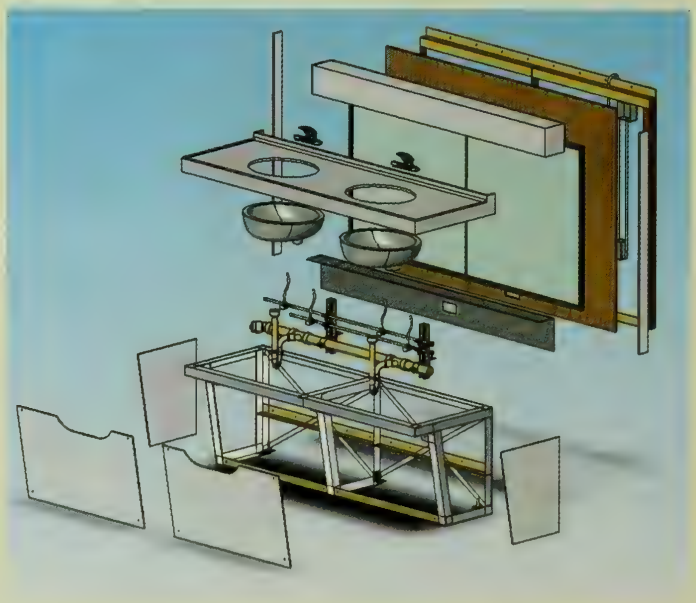
In the future, the connection between architects and materials manufacturing will lay in digital technology. Still in its infancy, it promises to make the connection between design and fabrication rapid and direct, turning three-dimensional drawings into three-dimensional products nearly instantly. The fundamental processes of making architecture are not affected, but the ability to see, hold, and refine designs before they are constructed on-site reopens the connections between manufacturing and design.

Relentless precision

"Every project is unique, and the architect unlocks how a particular building wants to be built," explains Marc Simmons, principal of Front (www.front-inc.com), an architectural practice in New York specializing in curtain-wall design. "Without a lot of experience to draw on, an architect can go through an investigative process and reject certain options because they appear to be problematic, but then unforeseen hiccups will arise that drive costs up."







Jeff Barrett applied 15 years of experience in manufacturing medical devices to the production of modular or component-based vanities for the hospitality and education industries. He uses design for manufacturability (DFM) and reliability engineering to analyze designs prior to factory production. Reliability engineering assumes that optimal performance of a complex component or system can be determined at the outset.

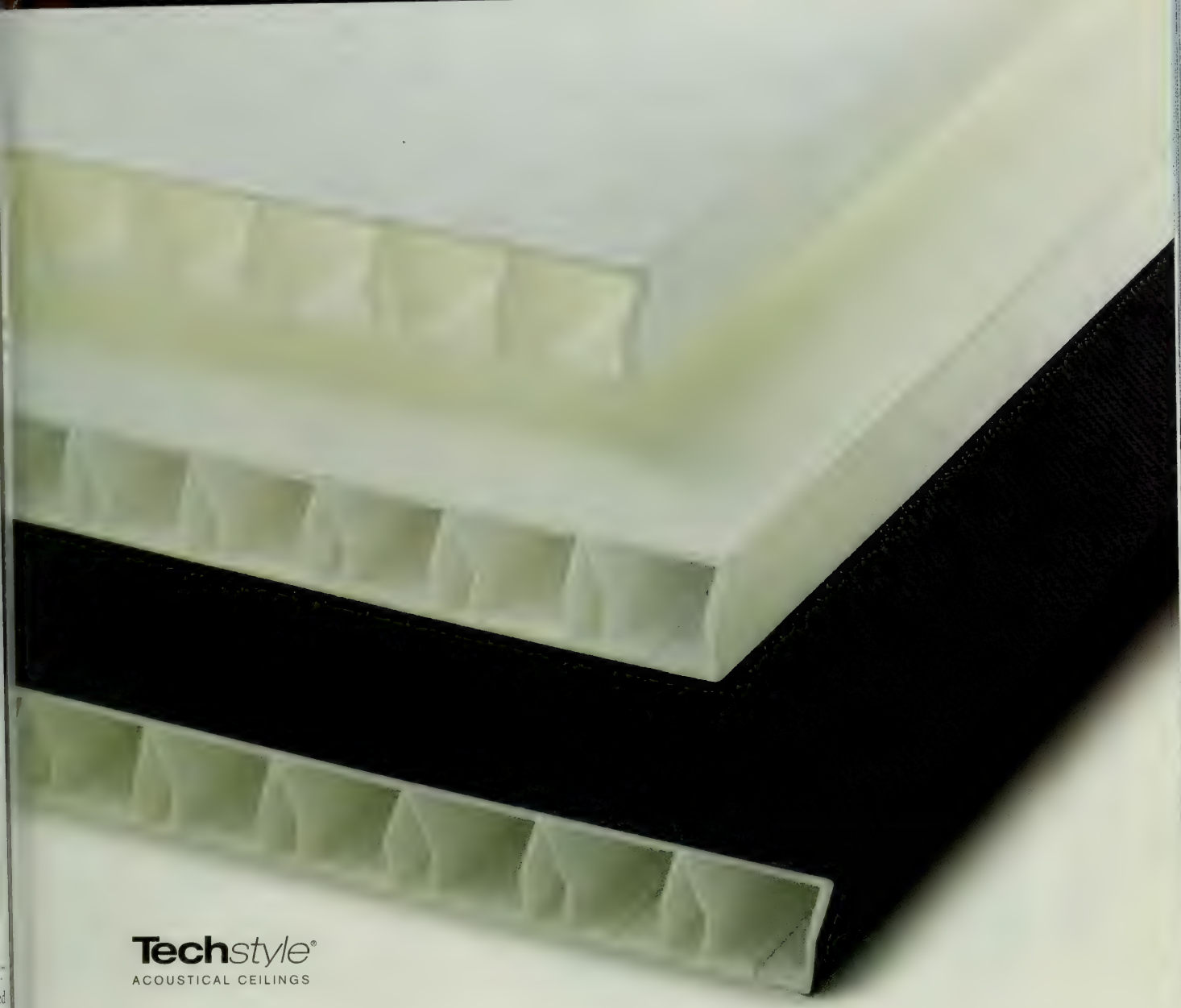
As facade consultants (with Dewhurst Macfarlane & Partners) on the Seattle Central Library, designed by Rotterdam-based Rem Koolhaas/OMA (see page 88), experience was indeed crucial to the outcome. "The library's facade is among the most sophisticated curtain walls, and yet simple," say Simmons. "It's not a cavity wall; it's very thin. The design intent was not conducive to the kind of component-based construction previously mentioned—prefabricated modules shipped to the site and assembled." It does, instead, fall into a subcategory of component building that Simmons calls a hybrid. It's true that the envelope was 90 percent site built, but all the pieces were pre-engineered, creating an elaborate kit of parts (or components). Each element of the grid was perfectly cut, then indexed and labeled. Every hole was drilled using computer numerical control (CNC) technology. Every gasket was installed in the extrusions in the factory. In other words, everything that could be unitized was, but assembly took place on-site in a relentlessly precise and repetitive manner. This approach is then what Simmons calls "semi-unitized." He argues that those "fine tolerances" that are produced in the controlled environment of a factory can be achieved using a hybrid system.

"FINE TOLERANCES" THAT ARE PRODUCED IN A FACTORY CAN BE ACHIEVED USING A HYBRID SYSTEM.

Design for manufacturability

Jeff Barrett, president and C.E.O. of Eggrock (www.eggrock.com), a Concord, Massachusetts–based company focused on manufacturing architectural products, was trained in economics and industrial engineering and has an M.B.A. For 15 years, he worked in the medical-device industry, where he held senior operating positions focusing on developing FDA-approved products for medical markets.

As someone who had a personal interest in design and architecture, he was struck by how behind the times construction seemed as compared to other industries, such as automotive and medical-device production. It occurred to him that the construction industry could be improved by leveraging the same state-of-the-art manufacturing and engineering principles used by others. Then he discovered the component-based designs of the Philadelphia-based architecture firm KieranTimberlake and approached them about rigorously testing a design as one would do prior to manufacturing a product—processes called



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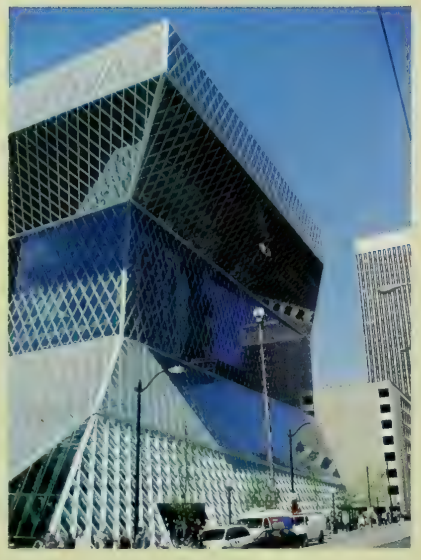
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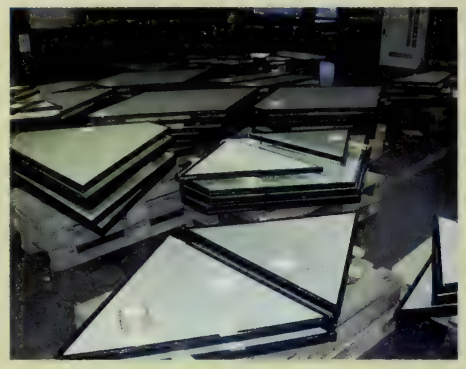
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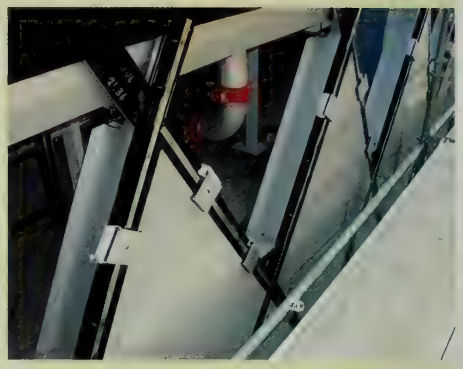
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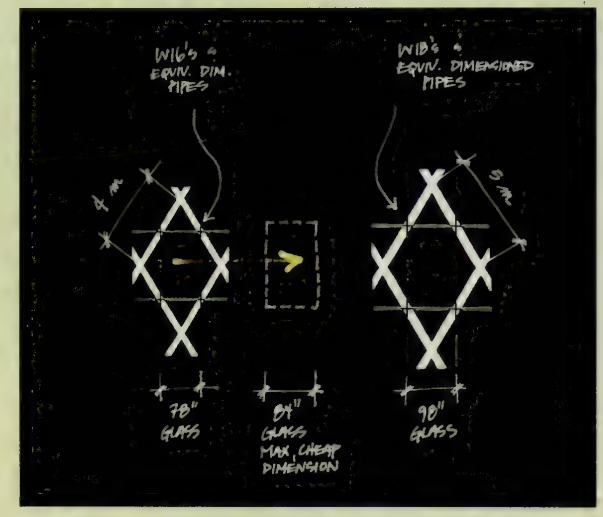
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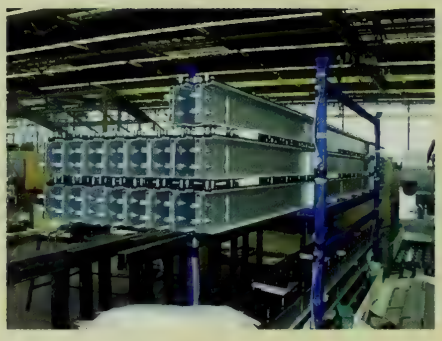


The Seattle Central Library is an example of a hybrid approach to component-based design. The curtain-wall consultants, Front, chose to pre-engineer everything off-site to the extent that they could, using CNC technology to create a kit of parts for the facade. Then 90 percent of the construction was performed on the site.









design for manufacturability (DFM) and reliability engineering. Using 3D solid modeling software (in this case, SolidWorks), Barrett was able to identify potential product problems from a product engineering and manufacturing point of view—for example, where countertops might crack, access panels may weaken over time, and other reliability issues.

DFM and reliability engineering turn component-based design into a highly engineered product suitable for factory production, thereby reducing costs and making architectural products more accessible to more people. Eggrock is designing and producing high-end vanities, and will soon expand into entire bathrooms, and eventually kitchens, for the hospitality and education industries. Barrett understands the benefits of off-site manufacturing over on-site construction. On-site construction of commercial bathrooms typically requires that trades work sequentially, which, of course lengthens the construction time. Plumbing, electric, tile, millwork, and glass trades must be orchestrated perfectly to produce a two-bowl vanity in nine days.

THE FACTORY HAS THE BENEFIT OF WORKING UNDER IDEAL CONDITIONS, INCLUDING RIGOROUS QUALITY-CONTROL PROCESSES.

As architects and builders know all too well, any delay cascades down the chain. Furthermore, each trade is working in cramped conditions and cannot match the efficiency of a well-tuned factory where all work can be done in parallel. In Barrett's factory model, everything is installed into the units in the factory—solid-surface counters, supply and waste pipes, sinks and faucets, shelving, mirrors, light fixtures, and electrical outlets. The factory has the benefit of working under ideal conditions, including rigorous quality-control processes. On-site, they need only be set in place and connected to one electrical and plumbing connection. This can be achieved in less than one day, versus nine days using the conventional method.

The applied knowledge that Stacey and Simmons argue for is evident in the work of some forward-thinking design-build firms, which



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The gridded exterior of the Seattle Central Library covers 126,767 square feet.

nonetheless adhere to a pragmatic approach. St. Paul, Minnesota–based architects Warner + Asmus, for instance, embrace the realities of manufacturing rather than struggle against them.

"We stress using existing processes and materials whenever possible," says principal Geoffrey Warner. "It is important to design in a way that takes full account of who is actually building the project, which is easier said than done when trying to push the envelope. Contractors [and manufacturers] who are willing to work with architects to achieve something out of the ordinary deserve a lot of credit." The firm is completing a

IT IS IMPORTANT TO DESIGN IN A WAY THAT TAKES FULL ACCOUNT OF WHO IS ACTUALLY BUILDING THE PROJECT.

house made from SIPs. Because Warner has such a thorough knowledge of the manufacturer's system of fabrication, he claims that the working drawings for the shell could have been sketched on a napkin.

As shown, component-based design can be applied to almost any scenario, from the conventional to the experimental, and for any budget or at any scale. Although acknowledging that design remains "a continuous and reiterative process of value judgments," Stacey and a growing number of architects believe that the tools of mass production, which enabled the development of tools of mass customization, will now allow architects to rediscover genuine craftsmanship. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- Read the article "Defining Component-Based Design" using the learning objectives provided.
- Complete the questions below, then fill in your answers (page 226).
- Fill out and submit the AIA/CES education reporting form (page 226) or download the form at www.architecturalrecord.com to receive one AIA learning unit.

QUESTIONS

1. A deliberate process of thinking through the relationship between intent of a project and the means of achieving it is defined by Michael Stacey as which?
- **a.** component design
- **b.** elements of construction
- **c.** working knowledge
- **d.** units of something more complex

2. Engineered materials involve which procedure?
- **a.** engineers draw the idea, select materials, and decide how they will be put together
- **b.** architects draw the idea, select materials, and decide how they will be put together
- **c.** architects draw the idea; engineers then select materials and decide how they will be put together
- **d.** engineers draw the idea; architects then select materials and decide how they will be put together

3. Advances in component design are due to which factor?
- **a.** new materials
- **b.** new engineering methods
- **c.** new understanding of components
- **d.** new joinery techniques

4. A glass stairway was allowed by building officials for which reason?
- **a.** it was open and light
- **b.** the performance was verified
- **c.** the contractor understood what he was being asked to build
- **d.** the architect replaced the building officials with engineers

5. According to Stacey, the future of the connection between architects and materials manufacturers is which?
- **a.** putting architects in charge of manufacturing
- **b.** having architects design the materials or systems that connect the parts of a building
- **c.** design-build
- **d.** digital technology

6. Factory construction is faster than on-site construction for which reason?
- **a.** on-site trades work sequentially
- **b.** factories are remote from the site
- **c.** raw products cannot be delivered to a site
- **d.** factories operate 24 hours a day

7. Why is factory production more efficient than on-site construction?
- **a.** the factory allows work to be done under ideal conditions
- **b.** on-site construction requires more scheduling of subcontractors
- **c.** factories have quality control
- **d.** all of the reasons above

8. The example of semi-unitized construction resulted in which?
- **a.** assembly in a factory
- **b.** fine tolerances
- **c.** holes drilled on-site
- **d.** grids cut on-site

9. New advances in unitized construction are seen in which building component?
- **a.** structural insulated panels
- **b.** EIFS
- **c.** curtain walls
- **d.** polymer construction

10. Architects were once expected to have knowledge of structural and nonstructural materials to make design decisions. What happened in the 20th century?
- **a.** detailing was invented
- **b.** responsibilities were compartmentalized
- **c.** engineers governed materials
- **d.** the gap between architects' knowledge of materials was exposed



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Tech Briefs

Investigation into collapse of Terminal 2E concourse continues

At press time, preliminary findings of the French government's technical investigation into the fatal collapse on May 23 of the year-old concourse building at Roissy Charles de Gaulle International Airport, just north of Paris, were due out in late June. Meanwhile, a parallel investigation into the circumstances surrounding the four deaths caused by the sudden collapse is under way.

The structural failure occurred at a section of the flattened tube-shaped concrete building designed by architects and engineers of the owner, Aéroports de Paris (AdP), a state company. The lead architect on the project, Paul Andreu (who retired from AdP last year), has declined to comment on the collapse until investigations are completed, acting on the advice of his attorney.

Only about 4 percent of the 2,130-foot-long concourse structure was directly affected by the collapse, but the fate of the entire building remains uncertain. While investigations continue, the Terminal 2E complex has been closed; however, AdP reports no faults with the linked 1.12-million-square-foot main passenger building served by the concourse.

Terminal 2E is the most recent addition to the airport's second Aérogare, which has opened in stages since 1981. Covering nearly 50 acres east of the original complex, it was built at a cost of about $900 million and completed in June 2003. Less than a year after it opened to traffic, operators must use other parts of the airport in an effort to compensate for losing the terminal's 10-million-a-year passenger capacity.



The collapsed area of the concourse is near an "isthmus" link to the main terminal building (seen in center background).

Understanding the design

Though there was little warning of the structural failure, the timing of its occurrence—just after dawn on a Sunday morning, when few passengers were in the airport—precluded more fatalities. Victims of the accident were located in an "isthmus" zone of the building, which connects the concourse with the main arrivals and departures area. The collapsed section abutted the isthmus, which was largely undamaged (see photo, above, and rendering, next page). Most of the mangled metalwork evident after the collapse is the non-structural framing for the concourse vault's 323,000-square-foot glazed covering.

The ill-fated concourse lies parallel to the main terminal building and is equipped to serve 17 aircraft. Because of the isthmus, the otherwise regularly repeating structural-shell configuration of the concourse is interrupted by openings. While this discontinuity is a potential weak point in the building's fabric, investigators are also looking into alleged construction problems with some of the columns supporting the concourse tube itself.

Structurally, the concourse is essentially a long, elevated platform covered by a vaulted concrete roof. The vault bulges to create a space of about 100 feet at its widest, and curves back in by several feet at floor level. Numerous punched windows within the structure provide natural lighting, and more light enters through glazed gaps between the 10 continuous concrete tubes that form it.

Each of the concourse roof's continuous sections is made of 17 precast-concrete vaults. Adjacent sections of this vaulting appear continuous but are, in fact, largely independent of each other, linked structurally only at their bases by cast-in-place concrete girders. These girders run along the outer edges of rows of columns that rise from piles installed in the clay-rich soil beneath the building.

At the isthmus building, several alternate side panels of the vault were opened up to create three passenger entrances. At those locations, the remaining intermediate vault sections were



Workers are collecting debris that may point to the cause of the accident.

Tech Briefs

designed to be connected to each other via the crown in order to bridge the structural gaps formed by the openings.

The vault's base was constructed to rest on sliding bearings to accommodate thermal expansion and other normal movements of the structure. As a result, they behave more like beams than arches, according to one British engineer informed of the project's details. The bending resistance of the shells is reinforced by a series of curved trusses affixed to their exterior (photo, right).

Conceptually, the design of Terminal 2E "couldn't get much simpler," says the U.K. structural engineer, who requested to remain anonymous. He further adds that, spanning about 100 feet, the structure cannot be seen as a particularly challenging or risky design.

AdP undertook all the outline design and also managed construction of Terminal 2E, mobilizing some 150 architects and engineers from within its ranks. However, the builder of the vault is reported to have denied responsibility for detail design work, which would have been normal practice in France.

Construction problems?

During construction, contractor GTM Construction of Paris precast each vault section in three pieces near the airport site, recalls Didier Primault, a senior engineer with the parent company Vinci Group. The pieces, forming both the sides and the crown of each section, were then brought to the site, where, using large cranes, GTM installed the three sections on temporary internal props. Workers then "stitched" the sections together with cast-in-place-concrete and steel reinforcing bars to form a continuous enclosure. Substructures of the concourse building were constructed by a different firm, Hervé of Paris.

During construction, AdP recorded problems with the construction of the columns supporting the vaults. As a result, each of them was reinforced externally by applying a layer of fiber-reinforced concrete. While AdP declines to discuss details while the investigation continues, a close observer of the project recalls a work stoppage for several months during the concourse's construction. "They had some serious cracks in the columns," says the engineer, who worked on a nearby building. Additionally, vault deflections "were bigger than expected," he adds. "They (AdP) recalculated completely the full structure."



AdP had problems with the concourse's supporting columns during construction.

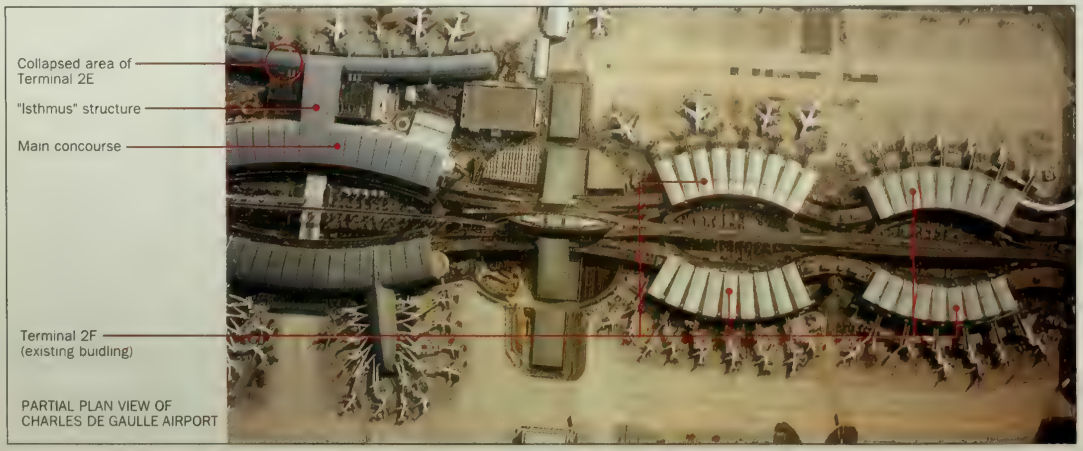
Continuing the airport's look

At least visually, the vault's design continues a theme applied a decade earlier by Andreu, then AdP's chief architect, in the adjacent Terminal 2F (at right in rendering, below), which is almost a mirror image of its follower. At the older terminal, the architect called for a blocky, vaulted concrete ceiling within the 1,300-foot-long, curving main building. This ceiling, which serves no structural purpose, is supported by more than 5,400 tons of steelwork arches. The arches span nearly 200 feet between two lines of supports and project back another 30 feet or so to a glazed rear wall. Erecting Terminal 2F's ceiling was one of the toughest tasks, contractors said during the project. To achieve the near-vertical curved front of the terminal, the contractor cast sections of the ceiling almost flat on a special turning frame and later pivoted them to the right orientation. The more horizontal parts of the ceiling were cast on props first, and only then was the supporting steelwork erected.

THE DESIGN OF TERMINAL 2E WAS NOT PARTICULARLY DARING OR CHALLENGING, SAYS A U.K. STRUCTURAL ENGINEER.

For the recent Terminal 2E main building, the design was simplified to ease construction and reduce costs, says Anne Brison, AdP's project architect. Its ceiling is made of African timber, which was more easily installed and lighter than the 2F vault, she notes. But for Terminal 2E's concourse roof, which has a span more modest than that of the main building, designers reverted to concrete, this time using it structurally and eliminating the steelwork arches used in 2F.

Since retiring from AdP last year, Andreu has run a small practice near Montsouris Park in southern Paris. However, he continues to collaborate with AdP on various projects. Among his most recent innovations was the proposal to use titanium for the long-span main girders of a new terminal for the airport at Abu Dhabi, in the United Arab Emirates. Meanwhile, his design for a new national theater are taking shape in Beijing, and his Oriental Art Centre in Shanghai is also well advanced. *Peter Reina*



PARTIAL PLAN VIEW OF CHARLES DE GAULLE AIRPORT

ıternational Design Competition for
lew Canal Town in Southern China

Jiangnan, South of Yantze River, presents a rich culture and distinctive habitat in Southern China that developed historically in close relationship with the landscape. With its extensive water network, adaptive built environment and established economic system, Jiangnan Canal Town, in fact, possesses many hidden characteristics of urbanity.

Provided its historic and environmental backdrop, the canal town of Zhu Jia Jiao calls for new ideas of urbanism for its new community development. This competition aims to bring back the awareness of natural evolution of man-made habitats; it hopes to inspire a new paradigm of city development, one that is neither urbanism nor suburbanism; it intends to provoke a lasting dialogue between Chinese heritage and contemporary living.

ıtibility: Open to all professional firm, individual and student

adline:
Registration August 30, 2004
Submission September 30, 2004

ard:
1st Prize USD30,000 (1 winner)
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Winning entries will be considered for project commission in Zhu Jia Jiao.

y members include:
Arata Isozaki
Stephano Boeri
Yungho Chang
David Chipperfield
Charles Correa
Mario Gandelsonas
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Residential

Both stimulating and calming, water in a residential landscape connects shelter to the outdoors

BRIEFS

Lincoln Cottage to be restored A generous gift from the National Trust for Historic Preservation, Comcast Cable, and HGTV has enabled the restoration of President Lincoln and Soldiers' Home, better know as the Lincoln Cottage. This Gothic Revival cottage was the summer residence of Lincoln and his family from 1862 to '64; besides the White House, it is the only building in the U.S. linked to Lincoln's presidency. The first phase of the restoration, overseen by Hillier Architecture, will be completed in September 2004.

Realizing the American Dream At the start of June, National Home ownership month, HUD announced a $161.5 million grant slated for first-time home buyers. The funding, allocated to 400 government agencies, will be distributed to those wishing to purchase a home whose incomes do not exceed 80 percent of the area median income. More information on this federal program can be found at www.hud.gov.

Nation's first antimicrobial home AK Steel has recently revealed the latest weapon in the war on germs: a concept home that not only resists fire and earthquakes, but termites and bacteria, as well. The home is constructed of more than 200,000 pounds of steel, much of it AK Coatings AgION antimicrobial-coated steel. Several other companies, including Carrier, Dacor, Dupont, and Sargent, contributed products to the home.

Residents of the Netherlands go with the flow Tired of fighting sea tides, inhabitants of Maasbommel, the Netherlands, have designed amphibious homes that are built on solid ground but are able to float. The houses sit on land but are connected to 15-foot-long mooring posts by sliding rings that allow them to float with the tide. Their water and sewage pipes and electrical cables are encased within these posts. The houses are relatively expensive for the area, but with an evident land shortage in the Netherlands, amphibious homes could be the wave of the future.

Roanoke, Va., cradles housing design and construction competition The Roanoke Regional Housing Network, GreenBlue Institute, and the AIA present the First International Cradle to Cradle Housing Design & Construction Competition, inspired by the book *Cradle to Cradle* by William McDonough and Michael Braungart. The competition aims to bring together architects and students with local builders, developers, and community groups to increase awareness about green building and ultimately construct about 30 homes selected by a jury. The entry deadline for the competition is December 15, 2004. For more information, visit www.c2c-home.org. *Audrey Beaton*

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The sound, movement, and reflective properties of water make it a most desirable element to augment the landscape of a home. Water features, once a hallmark only of aristocratic estates, are increasingly affordable and used imaginatively in smaller-scale residential gardens. Water has been added to the restoration of Richard Neutra's 1960 O'Hara House, by C.J. Bonura of Bonura Building (pictured below). The pool at once blends with the existing architecture, creates white noise to mask sound from the street, and cools the afternoon air that blows through the house. Working in tandem with the environment, water displays both dynamic and static properties.

The four houses featured on the following pages are defined by water, its compelling focus serving as the organizing principle for their design. These houses, finely crafted by their architects, gain even greater appeal through the skillful use of this element. *Jane F. Kolleeny*



The American Institute of Architects Announces the Housing PIA and HUD Awards for Design Excellence

SINGLE-FAMILY CUSTOM





Project: *Russell Cottage*
Location: *Panama City Beach, Fla.*
Architect: *Looney Ricks Kiss*
Client: *Darrell Russell, AIA*

This West Indies–inspired weekend cottage uses color and texture to combine traditional charm and contemporary style. A "drip wall" made of corrugated galvanized metal, with hooks for hanging wet bathing suits and towels, contrasts with the rich antique "sinker" cyprus planked floor and rustic shell-and-crushed-limestone inset. Porches on both floors at the front of the house overlook a main street, while a more private screened porch opens from the rear.



Project: *Blue Ridge Farmhouse Addition, Pleasant View Farm*
Location: *Washington, Va.*
Architect: *Robert M. Gurney, FAIA*
Client: *Robert and Elizabeth Haskell*

Located in the rolling hills of central Virginia, this graceful addition adds a spacious new living and entertaining space, as well as a changing room and bathroom, to an existing 18th-century farmhouse. Conceived of as outbuildings, Gurney's pavilions, one clapboard and one steel and glass, join the existing building via a new entrance spine, and complement the materials and geometries of the old farmhouse.



Project: *The Prospect*
Location: *La Jolla, Calif.*
Architect: *Jonathan Segal, FAIA*
Client: *Jonathan Segal, FAIA*

Segal's residence/architecture studio mitigates the dividing line between residential and commercial property in downtown La Jolla. Despite its urban location, the house is remarkably private. The main living area is flanked by a reflecting pool on one side and a glass floor looking into the studio below on the other. Segal served as architect, owner, and contractor.



The diversity of housing and community development projects honored here testifies to the truth that good design need not be constrained by financial resources, geography, or environmental concerns. This is demonstrated by an educational/civic center that serves as a centralizing force for the community, single-family houses that draw inspiration from historic precedent, barracks and row-house designs that exploit the aesthetics of these distinct building types, and three residential projects that propose unusual mixed uses in tight urban settings. Indeed, good designers use limitations as opportunities that propel them toward unconventional solutions. *Jane F. Kolleeny*

SINGLE-FAMILY MARKET





Project: *Row Homes on F*
Location: *San Diego, Calif.*
Architect: *Kevin deFreitas Architects*
Client: *Sebastian + deFreitas*

This adaptation of the typical East Coast–style row house to urban San Diego maximizes light and air in each of the 17 homes. Designed as live/work units, the residences interact with the street through their gracious overhangs, landscaping, and individual stoops, as well as a ground-level room that can accommodate a home-based business.



roject: *The State*
ocation: *San Diego, Calif.*
rchitect: *Jonathan Segal, AIA*
lient: *Jonathan Segal, FAIA*

This project defines two new housing types for San Diego's urban core. One combines a smaller living space with a rentable office/apartment. The other is a mixed-use, single-family residence that is influenced by Southern California's courtyard-style houses. Both types consider the character of the neighborhood and the scale of the streetscape.



Residential News

MULTIFAMILY HOUSING



Project: *North Towers-on-the-Court*
Location: *West Hollywood, Calif.*
Architect: *Michael B. Lehrer*
Client: *8223 Norton LLC.*

These tower units, a new type of courtyard housing developed on West Hollywood's narrow lots, use four-story glass facades to immerse the apartments in light, maximize internal and external views, and connect each floor within the residences. At night, the towers are illuminated beacons. Their adept use of a street "wall" and recessed mass allow the units to be built repeatedly within an existing neighborhood.





Project: *Loyola Village*
Location: *San Francisco, Calif.*
Architect: *Seidel/Holzman*
Client: *University of San Francisco*

Loyola Village skillfully adds 136 units of university housing to an area flanked by an urban campus and a residential neighborhood. The scale of the units, each with its own entrance, supports the pedestrian traffic of the neighborhood, while the buildings' coloring and texture enhance the identity of the area. The buildings' mixture of studio, and one-, two-, and three-bedroom apartments for faculty and students maintains the diversity of the community.

COMMUNITY DESIGN

Project: *City West Revitalization*
Location: *Cincinnati, Ohio*
Architect: *Torti Gallas and Partners*
Client: *Community Builders*

This project simultaneously revitalizes Cincinnati's West End and provides quality housing to families and individuals with varying incomes. The houses are sensitive to proportion, mass, and scale. Historic precedent guided the design.





Project: *Belmont Heights Estates*
Location: *Tampa, Fla.*
Architect: *Torti Gallas and Partners*
Client: *Tampa Housing Authority*

This redevelopment of an existing 860-unit public housing project transformed barrack-style housing into a residential neighborhood of traditional houses with sociable front porches. Tree-lined streets break up the existing superblocks, creating a new, comfortable scale for the area.

roject: *The Titan*
ocation: *San Diego, Calif.*
rchitect: *Jonathan Segal, AIA*
lient: *Jonathan Segal, FAIA*



By removing the elevator and interior corridors of the multifamily dwelling, Segal was able to add space and cost savings to the building. Three entrances are accessible from street level, where a parking lot and courtyard circulation provide a safe, communal atmosphere. Within the units, the two-story living spaces have abundant glazing and high ceilings. The exterior cladding of the building is designed to recall the tuna boats that docked in the area in the early 20th century.





Project: *Chelsea Court*
Location: *New York City*
Architect: *Louise Braverman*
Client: *Palladia*

Designed to show that everyone deserves a bright, well-planned home, 14 of Braverman's studios are reserved for the recently homeless, and the other 4 for low-income tenants. Symmetry is created throughout by the color coordination of public hallways with kitchen and bath tiling. A shared lounge, conference room, laundry facility, and terraces also blend with the studios' aesthetic and enhance the sense of community.

HUD AWARDS: COMMUNITY BY DESIGN

Project: *The Carver Academy and Cultural Civic Center*
Location: *San Antonio, Tex.*
Architect: *Lake/Flato Architects*
Client: *The Carver Academy*

A new library building with a glass facade and inviting overhang is central to a vibrant complex that includes an academy, a renovated civic center, and a cultural arts venue undergoing renovation.



HUD AWARDS: MIXED USE/MIXED INCOME



Project: *Alegria, The Salvation Army*
Location: *Los Angeles, Calif.*
Architect: *Birba Group*
Client: *Residential Communities*

Located just off Sunset Boulevard, this project provides short-term and permanent housing, a child-care facility, and a family development center for families coping with HIV/AIDS. All the buildings are wood-framed and complement the scale of the existing neighborhood.

Crowned by lap pools, WOHA Designs' three tropical residences find a home on **Berrima Road**

By Robert Powell

On a steeply sloping site on Berrima Road in Singapore, architects Wong Mun Summ and his Australian partner Richard Hassell, known together as WOHA Architects, designed a Modern paradise in the tropics. It's hard to believe these three, highly refined, almost identical homes are rental units, rising like white oases in the city's suburbs. The sloping site demanded that the houses span three levels. Placed parallel to one another, each house consists of 4,000 square feet on a 4,000-square-foot lot. The tight site areas challenged the designers to convey spaciousness within limitations and find privacy for residents. The houses are staggered in relation to each other to create interest and reduce visibility to neighbors.

The architects explained their design strategy as consisting of three cubic forms linked by circulation passageways. The living and dining rooms relate to the garden at the lowest level. The three bedrooms are located at the entrance level, with the master bedroom sited directly in front of the lobby, accessible only from a narrow timber bridge, separat-

Robert Powell is an architect, educator, and writer based in Brighton, England. He is the author of a forthcoming monograph on the work of Soo Chan.

Project: *3 Units of Detached Houses at Berrima Road, Singapore*
Architect: *WOHA Designs—Richard Hassell, Wong Mun Summ, principal architects; Stephen Sargent, Philip Chiang, Lee Li Leng, Toh Hua Jack, project team*
Engineers: *Worley (structural); AE&T Consultants (m/e/p); A. Peter Tan Associates (quality surveyors)*
General contractor: *Jenal Enterprises*



1. *Living room*
2. *Dining room*
3. *Gallery*
4. *Kitchen*
5. *Storage*
6. *Utility*
7. *Asian kitchen*
8. *Service yard*



PHOTOGRAPHY: © TIM GRIFFITH



The top level of the houses offers views overlooking the garden. Here, lap pools and timber decks, shaded by a hovering roof, extend the length of the dwelling.





The third and highest level of each house is like a floating pavilion open to the sky (top).

These three homes rise like white oases over the city's suburbs (above).



SECTION

0 10 FT.
3 M.

1. *Bedroom*
2. *Family room*
3. *Swimming pool*
4. *Entry*
5. *Bridge to bedroom*
6. *Dressing*
7. *Living room*
8. *Kitchen*

ing it from the public areas of the house. The third and highest level, floating like a pavilion overlooking the gardens and shaded by a hovering roof, comprises another bedroom and family room, a lap pool, and a deck. Kitchen and utility areas occupy a semibasement at the front of the house. Each dwelling is entered from the north at the first-story level into an inviting lobby.

The buildings display a composition of contrasts: gray granite works with warm oak timber, solid plaster walls facing east juxtapose transparent curtain walls facing west, and the relative enclosure of the semisubmerged basement spaces dramatically contrasts the expansive views from the rooftop pool decks. Bamboo-surrounded courtyards at the lower level provide intimate and quiet shelter, as opposed to the open-sky roof terraces at the second-story level.

The roofs host three parallel, 82-foot lap pools aligned alongside identical sun decks. "Singapore's skies are often overcast and gray, and we wanted to transform this condition through the medium of water," explains Richard Hassell. "Water takes in light from its surroundings and saturates it with blues and greens. We used a crystalline-glazed ceramic tile from Indonesia in the pools, which adds to this effect, and then used an aluminum-panel ceiling to reflect the effect again." The narrow rectangular pools span the length of the houses and provide a welcome respite from the humidity and hot temperatures. The mood of the dwellings changes dramatically with the weather—on a wet, overcast day the gray granite elicits coolness, and on sunny days, the brightness of the tropical light conveys transparency and warmth.

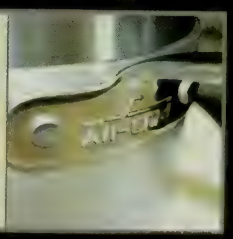
The houses mediate the effects of the sun. "The climate in the tropics is hot and humid all year round," says Wong. "These conditions require interventions that would not be appropriate in colder climates." Thus the architects employ overhanging flat umbrella roofs for shade, which extend more than 16 feet in front of each house and more than 6 feet on the other three sides. The 4-foot-deep rooftop pools reduce heat gain; the external walls contain large windows to permit cross ventilation;

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The garden serves as a planted staircase, which flows from exterior to interior. Inside, the stone stairs provide plinths for placing art and potted plants (right). Kitchen and utility areas occupy a semibasement at the front of the house (below).



and the rotation of each living room provides shading of their external walls without the need for wide overhangs. A cantilevered glass overhang above the top-hung windows in the stainless-steel curtain wall is a contemporary version of a traditional solution to combat the monsoon rain. Such details of construction result from rigorous investigation into the use of modern technology to mitigate tropical weather conditions.

Both Hassell and Wong explore ideas on tropical architecture beyond the accepted vernacular of pitched roofs, overhanging eaves, and wide verandas. "We pursue architecture that is not simply romantic imagery," says Hassell. However, who could resist the romance that water contributes to the building forms it accompanies? Here, the swimming pools set the theme for the silvery reflective palette of the houses. Hassell continues, "Water at the roof level powerfully connects the sky and earth, placing the swimmer in the center of an open expanse." ■

Sources

Water feature: *Mastscape Landscaping; Perfect Electric*
Glazed tiles in pool: *Kuda Laud Mas*
Flooring: *Parquet Technologies*
Kitchen and bath fixtures: *Duravit; Karat; Cosmic; Burnham; San-ei; Caroma; Laufen; Pulieffe; Hangrohe Gerda*
Paint: *Nippon Weatherbond*
Interior tiles: *Sideral; Cosmo*
Polished stone: *Otta Phylitt Quartzite*

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Water reflects and illuminates Shim-Sutcliffe Architects' **Weathering Steel House**

By Raul A. Barreneche

Toronto's North York district, just a few miles from the CN Tower's famous spire, is a world away from the genteel, tree-lined neighborhoods that drew Jane Jacobs north of the border after saving Greenwich Village and SoHo from the wrecking ball. In fact, North York, filled with tarted-up, oversize McMansions in fake Norman and Tudor garb, resembles almost any American suburb. The area does have at least one good feature: its setting at the crest of a wide wooded ravine, one of several that slice through Toronto's eastern flank.

This winding swath of nature in the middle of one of North America's largest cities figures prominently in the design of a North York home by Brigitte Shim and Howard Sutcliffe. The house wraps itself around a small pond filled with lily pads and a lap pool oriented toward the Toronto skyline, thinly veiled by a grove of birch trees and the woods beyond. The architects, partners in the Toronto-based firm Shim-Sutcliffe Architects, wanted to ensure visual permeability through the house as a play against a weathering steel exterior that suggests a much heavier structure. Windows along the front elevation align with those on the rear facade to open up views of the landscape from the street.

The clients initially imagined a stone exterior, but the architects persuaded them to try Cor-Ten steel instead. The owners were nervous when the skin first began to rust, but grew more confident with their choice as the Cor-Ten mellowed to a leathery chocolate tone and texture. Tawny Douglas fir board-and-batten siding on the garage and the playroom, gym, and service wing on the opposite end complements the steel's burnt-umber tones. Shim and Sutcliffe excavated the ground around the front side of this partially bermed service volume to create a light court that brightens what would otherwise have remained a dark basement. The move diminishes the monolithic quality of the Cor-Ten exterior, as do the recessed dining-room windows and a rain scupper notched into the front facade. Rainwater cascading down the scupper leaves its mark on the rusty steel siding.

Glass and wood, not steel, dominate the rear elevation. Many of the floor-to-ceiling mahogany-framed windows open to connect the house to the outdoors in good weather. During Toronto's long, cold winters, the large expanses of south-facing glass let the sun warm up the interior. (Overhangs and built-in brise-soleils of wood and steel provide solar control in summer.) A pivoting glass door on axis with the pond and

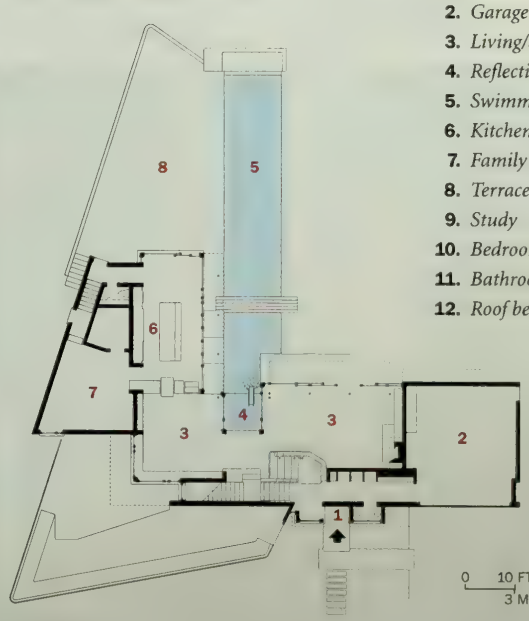
Raul A. Barreneche is a New York–based contributing editor for RECORD.



A strong urban face of Cor-Ten steel addresses the street on the north side of the house (above), while the south side features glass and wood and opens to the pools, ravine, and yard (opposite).



SECOND FLOOR



FIRST FLOOR

1. *Entrance*
2. *Garage*
3. *Living/dining room*
4. *Reflecting pool*
5. *Swimming pool*
6. *Kitchen*
7. *Family room*
8. *Terrace*
9. *Study*
10. *Bedroom*
11. *Bathroom*
12. *Roof below*

Project: *Weathering Steel House, Toronto, Canada*
Architect: *Shim-Sutcliffe Architects—Brigitte Shim, Howard Sutcliffe, principals*
Engineers: *Blackwell Engineering (structural); Ted Kesik (mechanical and building envelope)*
Consultants: *Neil Turnbull (landscape); Dan Euser, Waterarchitecture (reflecting pool, swimming pool); Tremonte Manufacturing (weathering steel cladding)*
General contractor: *Kamrus Construction*





A pivoting glass door opens to the pools outside (above right). Facing toward the south side (above left), with the reflecting pool below and living room at the left. The entrance and stair (at the right, below) are across from the reflecting pool, with the living room beyond.



lap pool abuts the edge of the water, creating an intimate connection between indoors and out. Rainwater pours down in front of the glass door from a roof scupper into the pond, adding a third dimension to the interplay of water and architecture, a consistent thread throughout Shim-Sutcliffe's oeuvre. When the owners were deciding on an architect, they visited Shim and Sutcliffe's own home, overlooking a walled-in garden with an artificial pond, and nearby Ledbury Park, which centers on a 300-foot-long reflecting pool that turns into an ice-skating rink in winter.

Shim and Sutcliffe manipulated the floor plan to create up-and-down movement through the house, as if traversing a topographically varied landscape. The strategy creates a stronger connection to the site than simply opening the house up to the views. Stepping through the front door, one enters a foyer that doubles as a mudroom, a functional necessity given Toronto's long spells of snowy, slushy weather. The architects built a wooden bench into a wall of storage closets paneled in Douglas fir with a strong vertical grain. A short run of steps leads up to the living room to the right and the dining room to the left; another short staircase leads down to the kitchen and a family room at the rear of the house. The master suite, guest room, and children's rooms are located on the second floor.

As in all of the firm's projects, Shim-Sutcliffe carefully detailed the

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The living room, with a wood-burning fireplace, faces the garden at the left (top). The elegant stair has mahogany treads, weathering steel handrails, and stainless-steel-mesh guards (below).



material palette of concrete and painted steel that play against polished mahogany floors and Douglas fir ceilings. There's a strong nautical air in the painted steel columns, curving handrails, and slatted-wood ceiling above the entry hall and the stepped walkway down to the lap pool. Inspiration also comes from Alvar Aalto, traditional Japanese wood construction, and the borderline-obsessive detailing of Carlo Scarpa, a favorite reference for Shim and Sutcliffe.

Beyond formalism, the house reveals Shim-Sutcliffe's desire to ground its architecture in the physical world and let day-to-day changes in weather and light animate its designs. Every room enjoys expansive views of the woods outside; sunlight on the pools, which remain heated through the winter so they don't need unattractive pool covers, cast reflections on the ceilings. Steam billowing across the pool in cold weather creates a dramatic effect, especially when it contrasts with snow, while in summer the water very nearly flows into the house. The ultimate inspiration for this home for all seasons comes from the sky, the landscape, and especially, water. ■

Sources

Exterior steel cladding: *Tremonte Manufacturing*
Roofing: *Soprema*
Wood windows: *Sashmen*
Glazing: *Sunlite*
Cabinets and woodwork: *Edwards and Wilson; Two Degrees North*
Tile: *Daltile*
Paint: *Benjamin Moore*

For more information on this project, go to Projects at **www.architecturalrecord.com**.


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How a "trailer with a cowlick" was transformed to **Texas Twister** proportions by the buildingstudio

By David Dillon

From a clump of cedar elms a carport swoops up and out, as if caught by a sudden gust of wind. Architect Coleman Coker, who with his late partner Sam Mockbee designed the carport and the house that goes with it, thought it looked like a funnel cloud, so he nicknamed it the "Texas Twister." "It's really just a sculptural device, a kind of flag, that tells visitors they've arrived," he explains.

It is also the one bold formal gesture in an otherwise subdued and straightforward design. No cattle graze this 8,500-acre spread an hour south of Dallas; but it is home to deer, coyotes, bobcats, wild turkey, feral hogs, several kinds of rattlesnakes, and more than 100 species of birds.

The owners, a prominent Dallas businessman and his arts patron wife, bought it to escape the city as well as to have a place for their children and grandchildren to gather on weekends and holidays. They had no interest in ranching—the sardonic "all hat and no cattle" tag was fine with them—but both are ardent birders and conservationists who saw a chance to create a nature preserve out of a patch of fallow blackland prairie.

"My husband and I loved the landscape, the birds, and the challenge of restoring something that had been abused," she says. The couple acquired the property in the late 1980s, as funding for the nearby Superconducting Supercollider was drying up. Having spent billions on bunkers, tunnels, and other infrastructure, the federal government concluded that the project was a dud and pulled the plug. Land values plummeted, development stopped, but for some, opportunity knocked.

After making do for several years, the new owners asked Mockbee/Coker to design a main house overlooking a lake, plus a smaller residence for the ranch foreman. The big house was to be 12,000 square feet of concrete and glass, with grand spaces and dramatic views similar to those in the couple's Dallas house by Antoine Predock. "It just grew and grew," the wife recalls. "We never could seem to cut the volume back."

But the bids came in high, Mockbee died, and the entire project was put on hold. Nine months later, the couple decided that the big house was wrong for both them and the site, whereas the smaller house, which was under construction and which the foreman referred to as "a trailer with a cowlick," seemed just right. So the little house, enlarged slightly with a guest wing, became the main house, and a new foreman's house, designed by Dallas architect Russell Buchanan, was constructed elsewhere.

Except for the Texas Twister, the main house is almost subdivi-

Contributing editor David Dillon is the architecture critic for The Dallas Morning News.



sion simple. It forms a crisp L, with the long leg containing the kitchen, living room, and three modest bedrooms, and the shorter one, a pair of guest rooms and a covered patio. The wings are joined by a wood and steel deck that terminates in a drawbridge and observation platform on the north end. The drawbridge is a smaller and simpler version of the dramatic cantilevered aerie at the couple's Dallas residence.

The exterior consists of iron-flecked gray brick and corrugated metal siding, with deep overhangs for protection against the scorching Texas sun. The interiors, by Emily Summers, are equally straightforward and unpretentious: polished concrete floors, raw 2-by-12 pine rafters, exposed conduit, Home Depot light fixtures. Only the custom rugs and a few pieces of designer furniture suggest that the owners are also connoisseurs. A continuous 2-foot clerestory washes all rooms in natural light, giving them as many moods as the day. The one whimsical touch is the pair of large stainless-steel wheels that open and close the metal sunscreens—a pump house detail transplanted to the arid prairie.

Over the years, the owners have restored grasslands, created numerous ponds and wetlands for migrating shore birds, and sponsored research by ornithologists from Cornell. Long concrete water troughs extend outward from the kitchen and the patio, attracting both birds and grandchildren and, like the drawbridge and the observation deck, connecting the house to the landscape. Compared to the original main house, it is almost invisible.

"My husband goes down almost every day, but I'm a city girl who loves urban environments," says the wife. "It's taken me a while to understand the ranch thing and to appreciate the simple beauty of this place." ■



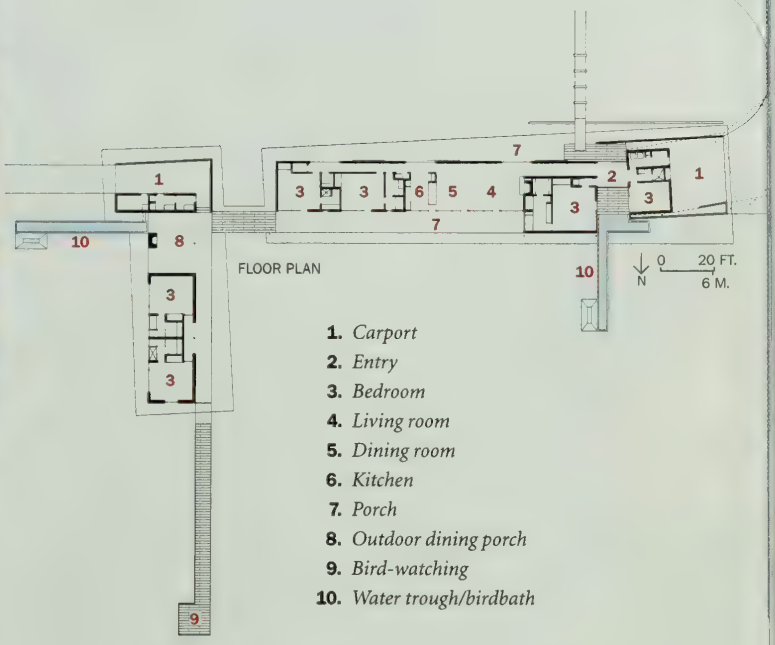
Project: *Texas Twister, ReyRosa Ranch, Ellis County, Texas*
Architect: *buildingstudio—Coleman Coker, principal; Jonathan Tate, project architect; Carl Batton Kennon, Matthias Maier, and Henry Yamamoto, production*

Sources
Metal windows/doors: *Kawneer*
Bathroom floors/tiles: *Ann Sacks*
Interior lighting: *Lightolier*
Bath fixtures: *Kohler*
Kitchen equipment: *Thermador; Kitchen Aid; Sub-Zero*
Furnishings: *Edward Wormley; Guglielmo Ulrich; Greta Crossman*
Paints: *Sherwin Williams*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

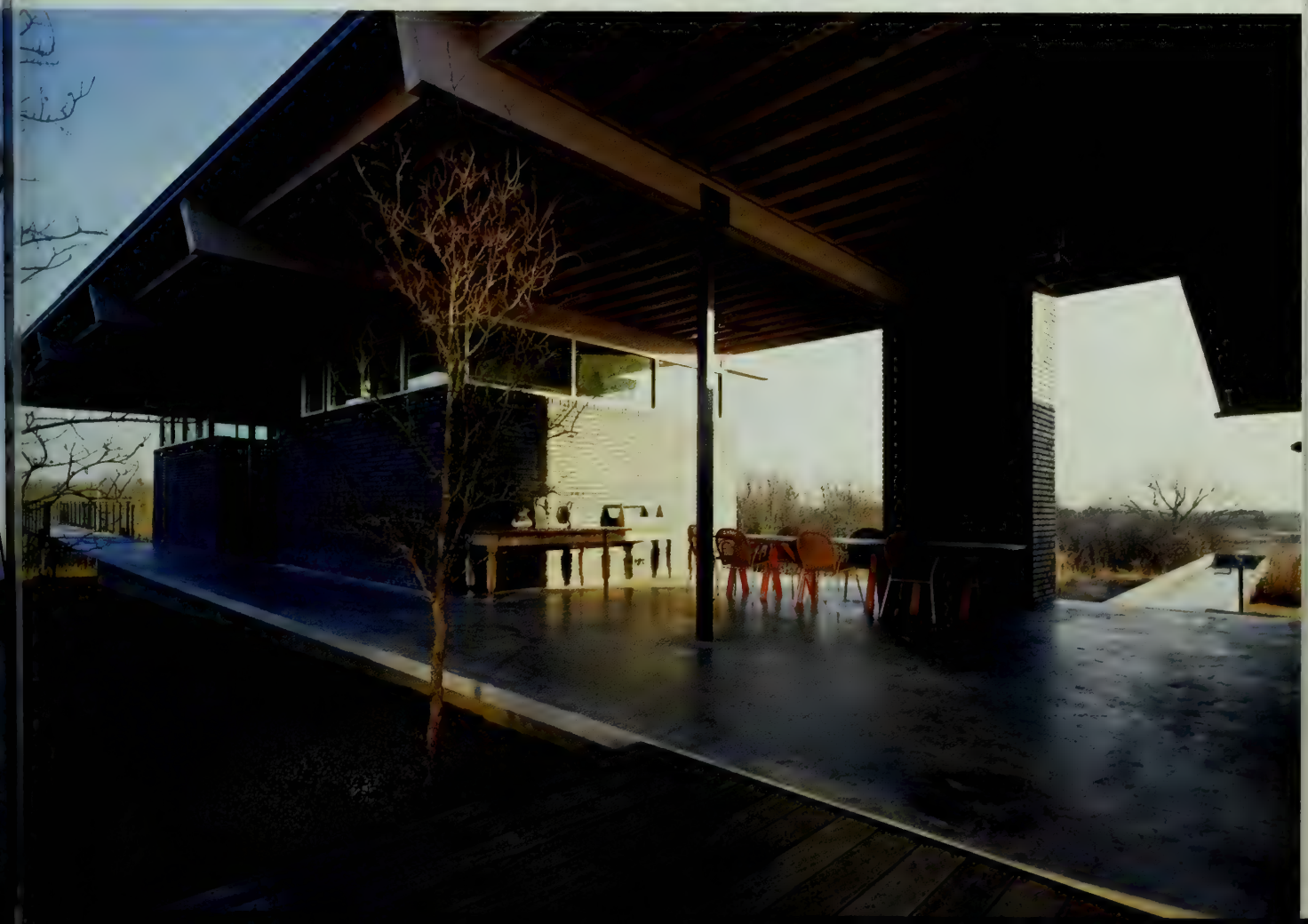






1. *Carport*
2. *Entry*
3. *Bedroom*
4. *Living room*
5. *Dining room*
6. *Kitchen*
7. *Porch*
8. *Outdoor dining porch*
9. *Bird-watching*
10. *Water trough/birdbath*

Except for the "Texas Twister" (opposite, bottom), the main house is subdivision simple, forming a crisp L (opposite, top), with the long leg containing the kitchen, living room (above), and bedrooms; the shorter one, a pair of guest rooms and a covered patio (below).





The dining area appears to float in the pond (opposite, top), where large Japanese coy swim (this page). A massive, 85-foot-long wall made of Waimes stone defines the front facade (opposite, bottom).



Appearing to float in a coy-filled pond, Groep Delta's **Villa C** harmonizes effortlessly with nature

By Philip Jodidio

The Belgian architecture and urban design firm Groep Delta is based in Brussels and in Hasselt, near the Dutch border. One of its senior partners, Frederic Chaillet, decided to build his home on a tract of farmland in Zonhoven, just outside of Hasselt. Trained as an interior designer, he handles the group's finances, administration, and clients, and here called on his own creative team, headed by design director and partner Juul Vanleysen. Chaillet had clear ideas about the living space he wanted for his family, and one of them was that the house was to be completely closed on the street side and entirely open to the garden. Vanleysen responded with a massive, 85-foot-long wall made of Waimes stone that defines the front facade, punctuated only by a steel door and a cantilevered carport. The rough finish of the stone wall is equally present in the long entrance hall, whose dark space opens into the generously lit living and dining area. Here, unframed floor-to-ceiling glass

Philip Jodidio is a Paris-based journalist and the author of more than 20 books on contemporary architecture.

Project: *Villa C, Zonhoven, Belgium*
Architect: *Groep Delta Architectuur –Juul Vanleysen, architect*
Interior design: *Group Delta renovation & Interior*
Landscape architect: *Michel Pauwels*
General contractor: *Dethier*
Lighting: *Roger Toussaint*
Engineer: *SBC*



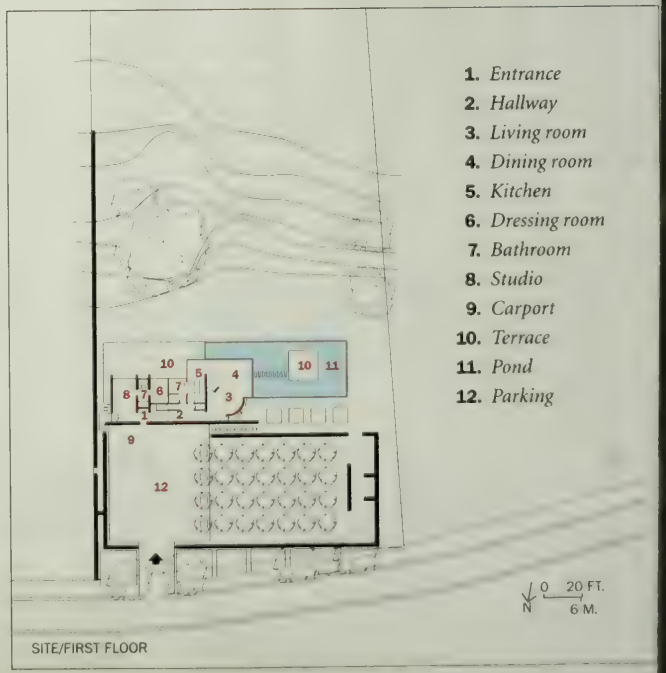


Seven stepping stones lead to a concrete seating platform in the pond, a gesture conceived by Vanleysen in the context of a study of "ancient building, astrology, and numerology."

contrasts sharply with the opaque density of the entrance wall. "In all of my work," says Vanleysen, "I look for a mixture of the old and the new—and a contrast between cold and warm materials. In the Villa C, the rough stone of the entrance wall contrasts with the clean floor and ceiling. This gives a kind of emotion to the house." The architect and his partner did disagree over one unusual feature of the interior: a truncated, shingle-clad cone that houses the fireplace and projects above the thin roof of the dining space. "I told him I wanted a square house, because that is the way I think," says Chaillet. "I was against this intrusion, but now it has become one of my favorite spaces."

The architect worked closely with landscape designer Michel Pauwels to create exterior spaces in harmony with the architecture, in particular the pond that faces the dining area. Seven stepping stones lead to a concrete seating platform in the pond, a gesture conceived by Vanleysen in the context of a study of "ancient building, astrology, and numerology." Pauwels selected grasses, bamboo, and other plants intended to move with the wind.

Though furniture, such as the Ron Arad designs in the space near the fireplace, were chosen by the owner, most of the interior design was the work of Groep Delta partner Luc Buelens. The custom-designed kitchen features surfaces of steel, glass, and wenge (a dense exotic wood with straight grain and coarse texture) that contribute to the overall impression of a house that was at least partially inspired by 1960s



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The rough finish of the stone wall is present in the long entrance hall (left). The custom-designed kitchen features steel, glass, and wenge wood surfaces (below).

California Modernism. A constant theme on the garden side is the close connection of the interior to the exterior. There are no curtains, and even the master bathroom has a large door opening directly from the shower into the garden.

Bedrooms for the owners and their two small children are located on the upper level and also look out into the spacious garden. Custom-designed furniture for the children's area is echoed in the dressing rooms by a wenge-clad block containing drawers and cupboards for the adults. A Paolo Piva bed facing a double-height window dominates the master bedroom. A discreet steel spiral stairway allows access to the ground-level television room. The large plasma screen here is one of the few visible indications of the presence of modern technology in the house, though the residence is fully wired and computer controlled.

The Villa C is indeed a study in contrasts, both in materials and in types of spaces, varying between the darkness of the entrance hall and the full light of the living spaces, between a Minimalist smoothness in some features and an intentional play on roughness. Upstairs living spaces are not cramped, nor are they generous, while the dining area and kitchen seem to stretch directly into the ample garden. The basin that runs along the back of the house on the garden side shows a certain Asian influence on both the client and the architect. The presence of water, like that of plants that blow in the breeze, is intended to animate what Chaillet says would otherwise be a very "static" view. Transparency, light, and reflections characterize this house and form a striking contrast to the rough, closed entrance facade. ■



Sources

Floors: *Bolidt*

Bathroom furnishings: *Philippe Starck II*

Kitchen: *Miele*

Lighting: *Delta Lighting*

Furnishings: *Ron Arad for Moroso and Vitra*

Dining room: *Vico Magistretti for Fritz Hansen*

Master bedroom: *Paolo Piva for B+B Italia*

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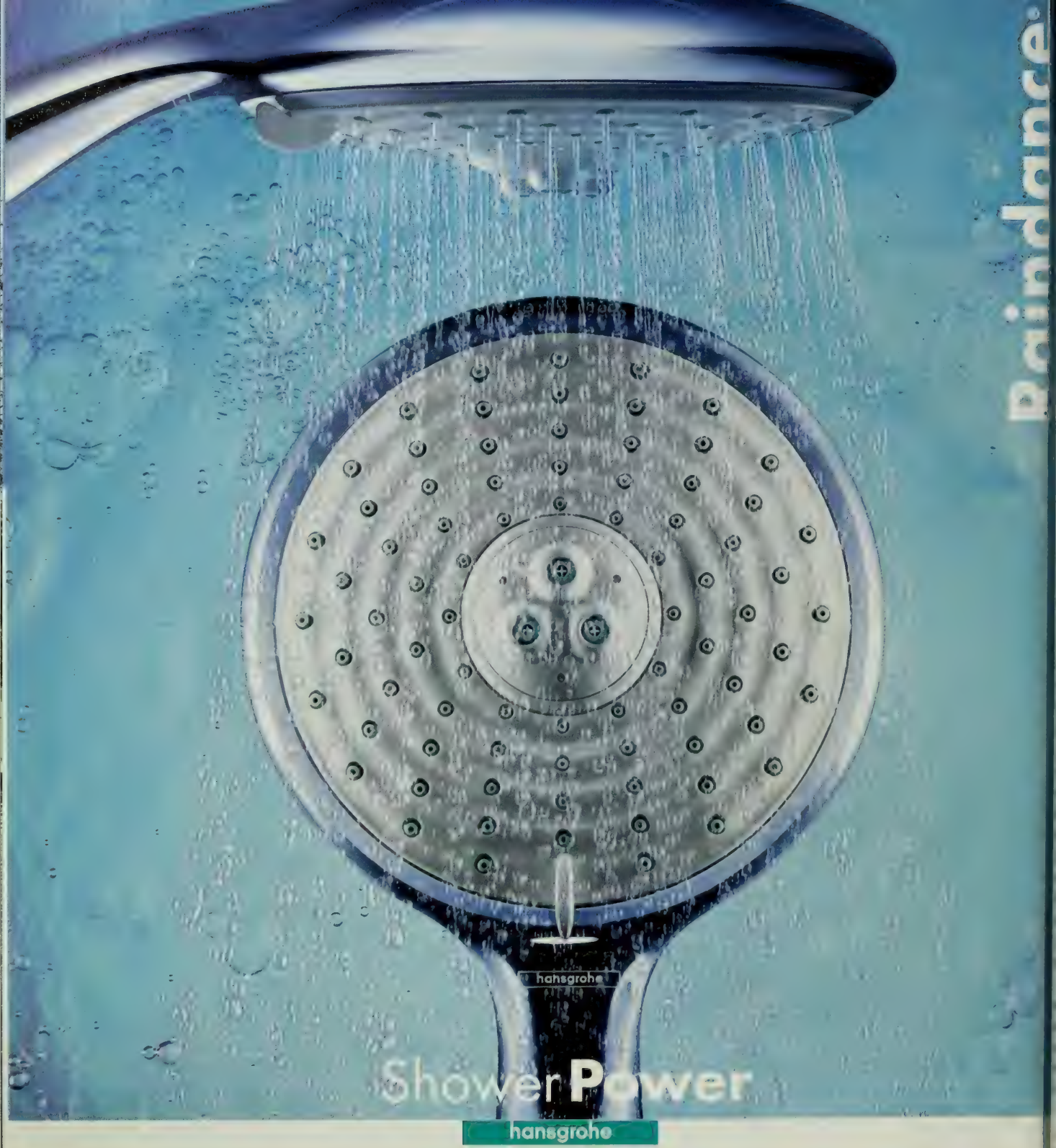
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Kitchen & Bath Portfolio

The dramatic **kitchen and bath projects** featured in this year's Portfolio take advantage of natural and artificial light, an array of tactile finishes, and carefully chosen **organic and geometric forms** to create spaces that are ideal for entertaining, escaping, or both. *Rita F. Catinella*

Gallerylike spaces in a Sydney home frame a couple of art lovers

Built to house a collection of art and books for a work-at-home couple, the aptly named "House for Art Collectors" was designed by Marsh Cashman Koolloos Architects (previously Marsh Cashman Architects) on the site of a former Sydney art gallery. The three-level home features rectangular building forms and a central outdoor private space that accommodates a lap pool.

The husband-and-wife clients wanted the home to feature simple and modern finishes and to have a ground floor with an open, flowing connection to the courtyard and external living areas. To reinforce this seamless transition, the firm specified thin sections of steel-framed glazing to reduce the separation between inside and out.

A box clad in zinc paneling and containing the master bath hovers over the kitchen, defining the space below. For the master bath, which looks across the courtyard, the team chose finishes with a tactile quality, such as polished colored concrete tiles for the walls and heated floor, and honed black granite for the vanity. A bath and shower for two is located behind a sliding glass screen.

"The bathroom had to be a pleasant space to relax in," says Cashman. "When reclining in the sunken tub, you can open the window and gaze at the view to the city, listen to music, and set mood lighting."

The kitchen below has a large concrete counter that defines the room and mirrors the shape of the lap pool visible in the adjacent courtyard. The clients, who entertain often, wanted the kitchen to have an open plan but remain out of sight from the lounge area, a challenge the firm addressed through the addition of a screenlike extension. Another challenge, building the kitchen's island bench on-site in smooth-finished concrete, became "a structure exercise," according to Cashman.

Despite the challenges, both client and firm were happy with the outcome—a space that has the feel of a Modernist art gallery but still functions as a home. *R.F.C.*



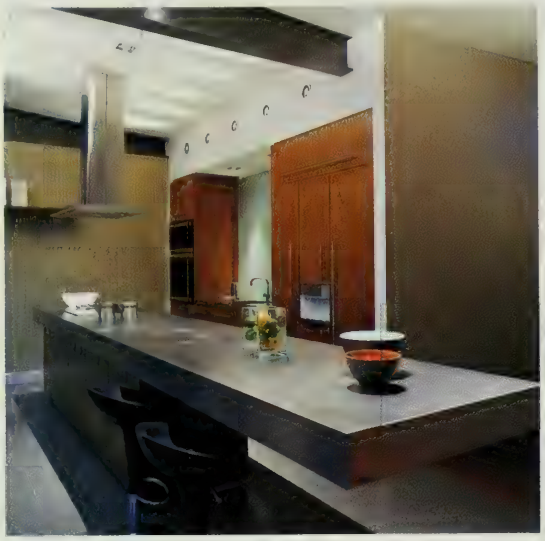




The zinc-clad box that floats over the kitchen (above) contains the master bathroom, where materials such as granite and polished concrete tiles (far left) create a clean, tactile environment. Abundant light streams in from the window, which offers views of the courtyard and the city from the sunken tub (near left).

Architect: *Marsh Cashman Koolloos Architects*
Builders: *Berg Brothers*
Sources: *Kitchen—Vola (tapware); Mirotone, Laminex, Pilkington (cupboards); Romano Concreting (concrete); VM Zinc (ceiling); Ilve (stove, oven); Maytag (fridge); Miele (dishwasher); Erco (lights); P&G Grunsells (cabinets); Steel Framed Windows Australia (windows, doors); Master bath—Sadler Tiles (polished concrete tiles); Hydrotherm (towel rack); Vola, Hansgrohe (tapware); Reflections Design (shower screen); Carmoma (toilet); Mirotone (linen cupboards); Kreon (lights)*

Kitchen & Bath Portfolio





The centerpiece of the New Inn Square penthouse kitchen is a cantilevered wrapped-stainless-steel island (far left), while a blue, serpentine shower stall is the focus of the master bath (near left). Lighting sets the stage for dramatic bathing in the Clink Street apartment (below).

Theatrical bathrooms are the stars of two modern London apartments

A "dramatic bathroom" might sound like an oxymoron, but how else could one describe the master bathrooms in these two London apartments? Clinton Pritchard, a partner at zynk Design Consultants of London, calls the bathroom of the New Inn Square penthouse a "complete theater of blueness." Blue lens fiber-optic lighting illuminates the sculptural focus of the room: a blue, serpentine shower stall. Skylights fitted with circular openings bring in daylight and feature colored lighting for night bathing. The custom-built joinery is made of willow, an unusual timber whose veneer has a holographic effect and gives the appearance of movement.

Theatricality continues as a motif throughout the apartment. The kitchen boasts a cantilevered, wrapped-stainless-steel island and professional-style cooking appliances. Custom joinery in the kitchen and flooring in the living and dining areas are finished in the client's choice of material, American black walnut. The open-plan design allows the kitchen, dining, and living areas to be interconnected for entertaining purposes and separated for privacy.

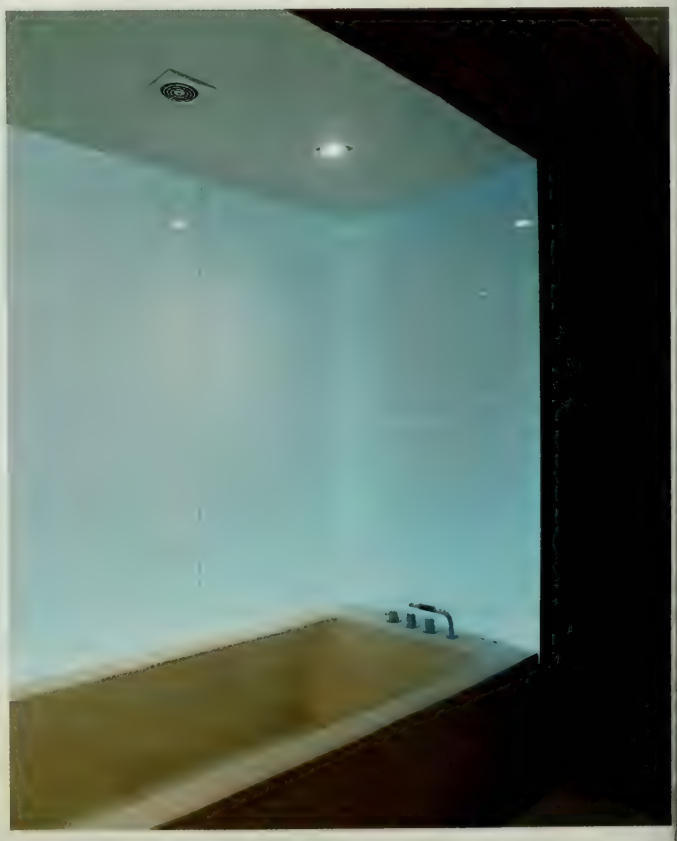
At the Clink Street apartment, designed by DIVE architects, lighting is also a central element in the bathroom. To allow natural light to filter into the space, the architects constructed two walls of the bathroom from two layers of opaque glazing. Dimmable fluorescent light fittings are housed within the cavity of the glazed walls so the bathroom functions as a light box, lighting both itself and the living space on the other side of the wall.

To accommodate the client's need for a bath large enough to hold three small children, the architects designed a tub of pigmented concrete, cast in situ. An ideal insulating material that gives the 7½-foot-long tub a seamless finish, the concrete was heavy enough to require the architects to strengthen the floor underneath it. A bathtub falling through the floor into the Starbuck's located beneath the apartment would surely have been too much drama for one bathroom to handle. *Diana Lind*

Architect: *zynk Design Consultants of London—Clinton Pritchard, project leader*
Project: *New Inn Square Penthouse*
Main contractor: *Absolute Shopfitters*
Sources: *Bath—Vola, Duravit (tapware); Duravit (toilet); Agape (wash bowls, tub) Kitchen—Gaggenau (vent hood, refrigerator, ovens, microwave)*

Architect: *DIVE Architects*
Project: *Clink Street Apartment*
Contractor: *Ashbuild*
Structural engineer: *Harrison Roberts*

Sources: *Kayode Lipedé (concrete); Solaglas (glazing); Delta Light (recessed lights); EncapSulite (fluorescent lights); Vola (mixer taps); Devi Electroheat (warm floor system); Kirkstone (Brazilian slate tiles); Hafele, Allgood (ironmongery)*





A glassy, faceted bathroom centers a rural N.Y. residence

The Gipsy Trail residence, designed by Archi-Tectonics for a site in rural upstate New York, looks almost boxy from the outside, but running through the center spine of the house is an organic "armature," a twisting collection of the house's infrastructure. Within the armature are the kitchen, fireplace, heating and cooling mechanisms, and perhaps most spectacularly, the master bathroom.

As the armature winds through the center of the house, a skylight follows. The skylight is formed of individual glass panes dividing the zinc roof. At the end of the structure, the skylight folds over to form the back wall of a shower stall, which the architects call "a transparent shower room floating in the trees."

The architects, led by principal Winka Dubbeldam, oriented the entire house to capture views of the lake and as much natural light as possible, and deliberately chose shiny white and chrome fixtures to make the most of the light.



A view of the bathroom from inside (left) and outside the home (above).

Beyond the sheer novelty of a shower that gives the feeling of being outside, housing the bathroom in the armature of the building dictates not only the room's shifting, tilting shapes, but also the shapes of the rooms around it—making it truly the core of the house. *Kevin Lerner*

Architect: *Archi-Tectonics*
General contractor: *T&L Construction*
Engineers: *Buro Happold; Stanislav Slutsky*
Sources: *UAD (zinc roofing, fenestration, railings); Duravit (lavs, toilet); Dornbracht (faucets, showerhead, valves); Kohler (tub); Omnipanel (towel warmer)*

A renovation of a 1950s town house brings June Cleaver's kitchen into the city

When Alexander Gorlin, principal of Alexander Gorlin Architects, approached the design of a kitchen for the renovation of a Modernist 1958 uptown Manhattan town house, he preserved something of the 1950s idea of a kitchen—even though the space wasn't one to begin with. "The original kitchen was in the basement," says Gorlin. "This beautiful space with floor-to-ceiling windows was actually a mudroom."

Gorlin designed the new kitchen to preserve the "luminous" nature of the room, and created translucent cabinetry to let the natural light through. "There really aren't a lot of kitchens in Manhattan with windows," says Gorlin.

The translucent cabinets hang from the ceiling, completely separate from the window frame behind. The cabinet doors were manufactured by Rudy Art Glass, and the sliding panels in the back are made of LUMAsite plastic. All of the other kitchen cabinetry is made of polyester-coated MDF.

"It's like a '50s suburban kitchen brought into the city," adds Gorlin, "insofar as you can stand in front of the sink and look out into a garden." *K.L.*

Architect: *Alexander Gorlin Architects*
Sources: *Rudy Art Glass (cabinet doors); American Acrylic Corporation (LUMAsite plastic panels); original travertine (flooring)*



The luminous quality of this kitchen designed for a renovated town house is enhanced by the use of translucent cabinetry suspended from the ceiling above the sink.

Kitchen & Bath Portfolio

The kitchen and master bath of this Tribeca loft showcase the original brick archways of the former factory space.





A practical kitchen and bath for the quintessential New York City loft

Victoria Blau drew on the "layering" of styles of Manhattan's streets for the renovation of a former Tribeca cheese factory into a home for a growing family. To maintain the loft's industrial history, Blau exposed its brick walls, centering the kitchen and master bath around preexisting archways. Against this backdrop, she juxtaposed highly finished materials, including glass and stainless steel.

In the master bath, a birch cabinet with double sinks nestles underneath the uplit archway. Streamlined fixtures adorn French limestone walls and the sheer glass shower stall. A similar palette marks the open kitchen, where a second archway houses more cabinets and a steel shelf. Mechanical equipment snakes along the ceiling, while cabinets house an urban necessity: recycling bins. The result is "pure" New York, a space where Minimalism rubs shoulders with the gritty textures of the past, with an eye toward practicality. *Claudia La Rocco*

Architect: *Victoria Blau Architect*
General contractor: *Certified of NY*
Sources: *Kitchen—RSA Lighting (lighting); Bulthaup (cabinets, recycling bins); Sub-Zero (fridge); GE (microwave, dishwasher); Gaggenau (wall oven); Dornbracht (sink faucet); Fisher & Paykel (gas cooktop); BEST (island range hood); In Sink Erator (garbage disposal); KitchenAid (trash compactor); Master Bath—Kohler (sink); AF Supplies (faucetry); Ultra (tub); Duravit (toilet); Dornbracht (accessories); Weaver Ducre (lighting); Studium (limestone)*

An airy southwest kitchen blends nature and machinery

When the Downing family retired to Tucson, they wanted to embrace their new landscape. The couple turned to Ibarra Rosano Design Architects, who created a home split into three "pavilions" to accommodate the property's Saguaro cacti and catch the hilly site's best views.

The lower section of the home contains the living/dining space, built around an open kitchen—a rustic center housing complicated machinery behind diverse surfaces. Two unusually large sections of native mesquite, found by the couple, form a boat-shaped center island topped by black granite and offset by birch cabinets. The sink is tucked behind a long, low herb planter, a practical flourish that enhances the room's natural feel. A taller island serves many purposes and provides extra storage in birch cabinets (with detachable backs for ease of entry). The cabinets also hide the building's heating and cooling duct system and a motorized appliance garage behind an aluminum backsplash. Containing these various mechanical systems within the island allowed the architects to maintain the butterfly ceiling's clean sweep, preserving the room's uncluttered feel. *C.L.R.*



Architect: *Ibarra Rosano Design Architects*
Contractor: *Repp Construction*
Sources: *Mark Perry (mesquite countertop, custom work); Franke (sink); Grohe (faucet); Sub-Zero (fridge); Dacor (oven, cooktop, vent); Bosch (dishwasher); Granite Creations (granite counter); Nevamar (cladding); Air Concepts (air nozzles); Miele (coffeemaker)*

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Residential Products

Eurocucina Review

Kitchens and appliances that adjust to a range of lifestyles were on display at the biennial Eurocucina exhibition, which took place last April during Design Week in Milan. *Josephine Minutillo*



◄ Staying single and unattached

Designed by Alberto Colonello for Boffi, Single is a freestanding or wall-mounted unit with fixed dimensions that can come equipped with a sink, dishwasher, refrigerator, or cooking surface. The body is made from ¾" wood-particle panels in several finishes with an inside cover in stainless steel. The bottom portion is available with a door or as a drawer, and the cover closes to create a compact block ideal for offices or small apartments. Various options feature additional storage and worktop space. Boffi Soho, New York City. www.boffisoho.com **CIRCLE 200**

▼ Futuristic filters

Elica, a manufacturer of kitchen hoods since 1970, has evolved from a small, artisan shop, whose products were intended exclusively for the Italian market, to an international leader with an innovative, modern collection. This year they introduced Om, an almost vertical, completely flat glass hood. The glass is silk-screen processed on the back in plain colors but can be customized with patterns or decoration. The processed glass is also less sensitive to finger marks and easy to clean, according to the manufacturer. Om's superior air and odor filtration was designed to achieve high efficiency levels with reduced aspiration power, making it less noisy than most conventional hoods. Elica, Ancona, Italy. www.elica.com **CIRCLE 201**



► Personalized pantry

Regula is a versatile kitchen system from Binova designed to adapt to a variety of spaces and cooking needs. Individual elements are made to be seen from all sides, allowing flexibility when arranging kitchen layouts. Autonomous elements come with castors for even greater versatility. The height of the work tops varies to adjust to specific ergonomic and functional requirements. Work tops come in aluminum, laminate, steel, marble, and Corian, with side panels in aluminum, matte lacquer, or laminate in a variety of colors for countless compositions. Bizhan Home, New York City. www.binova.com **CIRCLE 202**







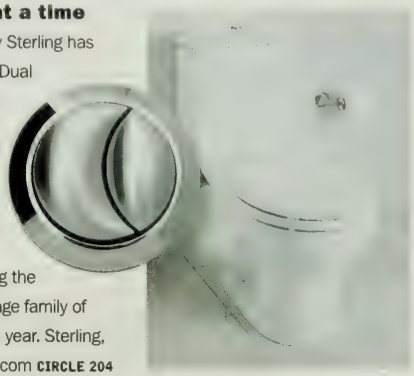
◄► Domestic sphere

First introduced as a prototype in 2002, the Sheer kitchen, along with the new brand, was officially introduced at this year's Eurocucina by parent company Gatto Cucine. Created by Drag Design, Sheer's highly innovative design anticipates future trends in living at the same time that it reinterprets tradition. Its provocative, perfectly spherical form encloses all the conventional and advanced functions of a large kitchen as it invites users to gather around it in the manner of a family hearth. Suitable for all types of living arrangements, the Sheer kitchen becomes an object at the center of a room rather than a room itself. Gatto Cucine, Camerano, Italy. www.gattocucine.it **CIRCLE 203**



Residential Products Kitchen & Bath

► Saving water a flush at a time



Not all flushes are alike. That's why Sterling has introduced the Rockton toilet with Dual Force flushing technology to allow users the option of selecting one of two water levels each time the toilet is flushed. Operated by a two-button actuator integrated into the tank lid, the toilet will flush at either 1.6 or .8 gallons. Choosing the .8-gallon button can save an average family of four up to 6,000 gallons of water a year. Sterling, Kohler, Wis. www.sterlingplumbing.com **CIRCLE 204**



▲ Eggs-cellent collaboration

Inspired by the simple oval shape of an egg, Aveo is the first collection of bathroom fixtures designed by the British-based design firm Conran & Partners for Villeroy & Boch. Aveo includes a lavatory, bidet, toilet (not shown), and tub. A variety of lavatory styles is offered, including vessel, vanity, and pedestal models, and self-rimming designs. A solid bamboo vanity (at right) and a selection of other storage options are also part of the series. Villeroy & Boch, Monroe Township, N.J. www.villeroy-boch.com **CIRCLE 205**



▲ Sinks fit for a diva

At last year's Cersaie show in Bologna, Italy, Toscoquattro launched several new products, including New Look (above), designed by Elena Bolis. Finished in bleached or cherry zebrano wood with lacquered or stainless-steel doors, the wall-mounted system supports a shallow, angled basin. Another introduction was the Opera collection of sinks designed in ebony, Dupont Corian, and stainless steel. AF New York, New York City. www.afnewyork.com **CIRCLE 206**

► No more tan lines

People are busier these days, and the shower has become one more place to multitask. Designed for residences, spas, hotels, or gyms, Indrolux showers feature a built-in tanning system that gently tans and purifies the skin as it cleanses. Sleek panels of patented tanning lamps offer colored light in a range of standard or custom color choices. All of the lamps are subjected to stringent testing and can be adjusted by a remote control. Indrolux USA, Lexington, Ky. www.indroluxusa.com **CIRCLE 207**



► New hoods in the hood

At this year's K/BIS, Zephyr introduced the first signature hood line by designer and artist Fu-Tung Cheng of Cheng Design. The three new hood designs include Okeanito, based on one of Cheng's original sweeping-curved-hood designs; Shade (right) a matchbook-inspired design with a hood shade that tucks away when not in use; and Trapeze, a hood with a floating curved canopy. Zephyr Ventilation, San Francisco. www.zephyronline.com **CIRCLE 208**





▲ Faucet comeback

At this year's K/BIS, Elkay introduced the company's first new major faucet line since the 1980s. The new collections include six kitchen pullout-spray faucets, two prerinse/prep-area faucets, and a wall-mount lavatory faucet. The faucets incorporate features such as a precise pivot-and-locking spout, a smooth-pulling spray head that releases and retracts easily, and one-touch operation that lets the user switch effortlessly from spray to stream water flow. Elkay, Oak Brook, Ill. www.elkayusa.com **CIRCLE 209**



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Residential Products Kitchen & Bath



▲ Self-cleaning shower head

The Grohe Retro Rainshower delivers a wide shower spray that envelopes the body in falling water. The oversize, 8"-diameter shower head features 120 spray nozzles arranged to leave no "dry" zones of water coverage. The all-brass shower head features the company's patented SpeedClean anti-lime system. The conical shape of the silver-green nozzle forces lime scale to accumulate only at the tip of the nozzle, which can "bend" when lightly wiped with a cloth or sponge, forcing the lime scale to crumble away. Grohe America, Bloomingdale, Ill. www.groheamerica.com **CIRCLE 211**



▲ Towel-less showering

To avoid that "moment of chill" that occurs after taking a hot shower, Jacuzzi Whirlpool Bath has added a special option, Ambient Air Body Dry System, to their Summer Rain shower series that provides complete head-to-toe drying. The system features 12 heated air jets incorporated into a central shower column that dries bathers off quickly, without the need for a towel. The temperature and airflow of the jets can be moderated through a control panel. Jacuzzi Whirlpool Bath, Walnut Creek, Calif. www.jacuzzi.com **CIRCLE 214**

► Gaga for cooking

Aga had a slew of new introductions at this year's K/BIS, including a dual-fuel range that incorporates gas and electric; a three-oven Aga that features a fast-roasting oven, a slow-simmering oven, and a baking oven; an undercounter wine cellar; and an all-electric AGA (right), which looks similar to its gas-fired siblings. Aga Ranges, Cherry Hill, N.J. www.aga-ranges.com **CIRCLE 210**





▲ A treasure chest for water

After traveling through the desert last year, designer Marcel Wanders earned a new appreciation for the value of water. According to Wanders, the tub and wash basins of his new Gobi collection for Boffi can be seen as "treasure chests, fortresses for the most valuable material on earth." Gobi includes a tub and two basins of different sizes. Boffi, New York City. www.boffisoho.com **CIRCLE 213**





▲ Mirror TV technologies

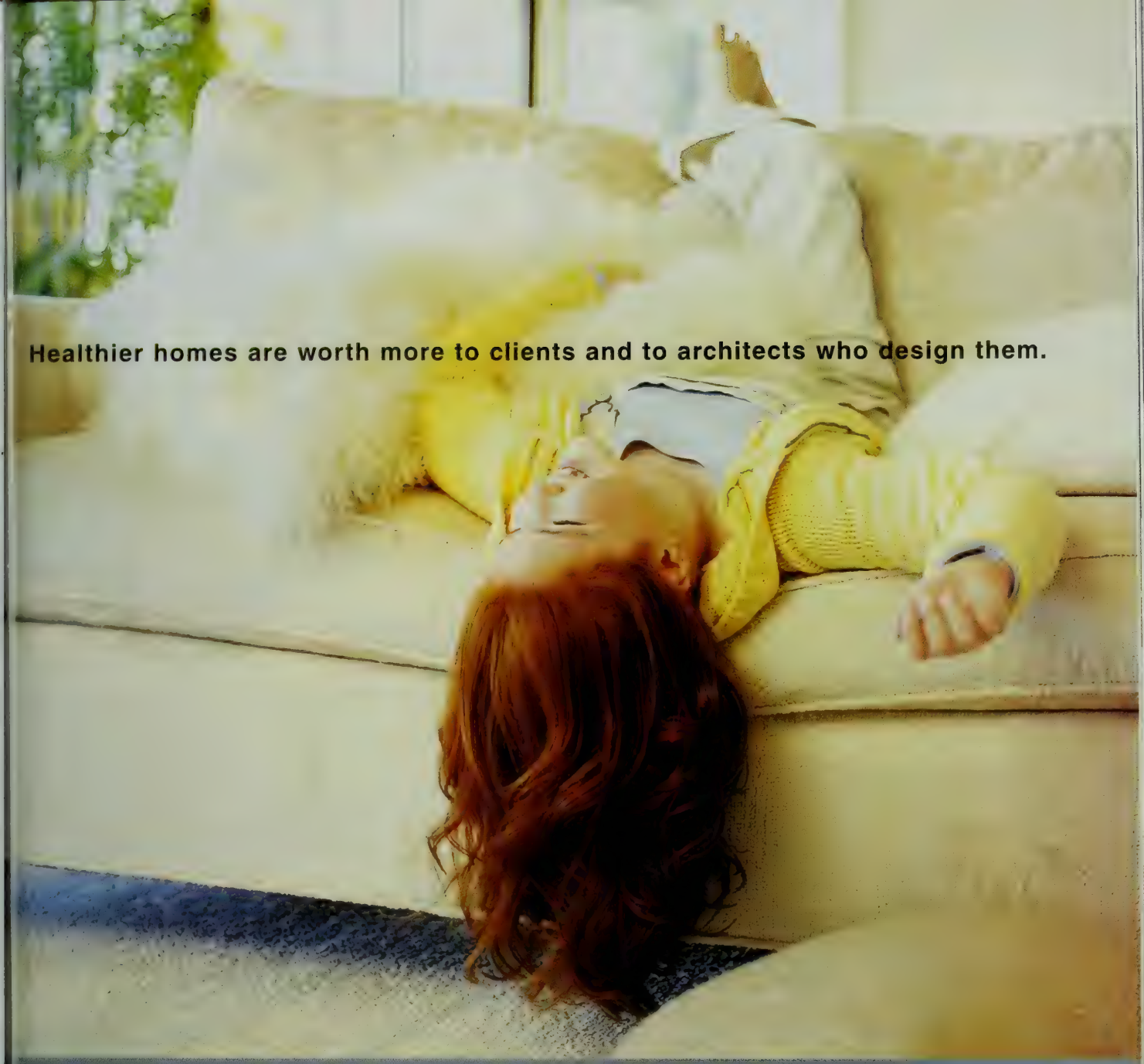
At K/BIS, Séura introduced a line of LCD televisions that are incorporated into bathroom mirrors (right). When activated, the screen is visible as a window within the mirror—when off, the LCD is completely hidden from view. On the other side of the show floor, ad notam displayed a competing integrated-display screen that utilizes thin-film transistor technology (left). ad notam USA, New York City. www.ad-notam.com **CIRCLE 212** Séura, Little Chute, Wis. www.seuratvmirror.com **CIRCLE 253**



◄ Raining down the drain

Introduced globally this year at the Milan Furniture Fair, the Rain sink collection is Adam D. Tihany's first foray into bathroom product design. The vessel-style basin is bordered in a halo of stainless steel or bronze, suspended on a colored-glass plane. Water cascades down a square-lip geometric spout that bisects the back of the basin's rim. The faucet's compact levers are flush-mounted into the spout, easing right for cold water and left for hot water. Axolo, Ontario, Calif. www.axolo.it **CIRCLE 215**

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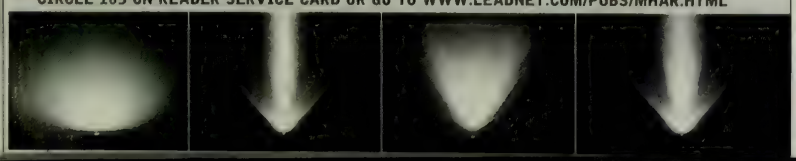
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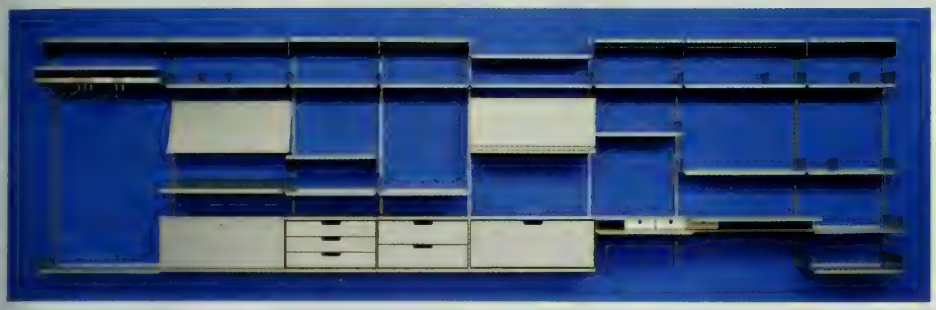
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Products

Storage & Shelving

The storage and shelving products featured this month are not **merely utilitarian pieces** that contain belongings or files. Many serve double duty as sculptural wall pieces or freestanding screens that help divide or define a room. **Flexibility remains key** for changing work and lifestyles. *Rita F. Catinella*





The 606 shelf system doubles as a screen at the offices of Countrywide Porter Novelli in London.

Iconic shelving system available throughout North America

Described by New York's influential retailer Murray Moss as "one of the great icons of 20th-century rational design," the 606 Universal Shelving System has been produced by Vitsoe continuously since 1960, the year it was designed by German industrial designer Dieter Rams. Last October, Moss expanded the distribution of the system to all of North America through Moss dna, a division of his retail store in New York City.

Since 1995, both Vitsoe and its manufacturing have been based entirely in Britain. There are four "structure" types for the 606 system, which depend on the type of wall, floor, and ceiling; what will be stored or displayed; and the desired look of the system. Shelves, cabinets, and tables can then be repositioned or added onto the appropriate structure without tools by simply slipping the aluminum pins out of the system's E-Tracks. Lengths are possible in 26" and 35½", and depths in 6¼", 8½", 11¾", and 14¼". The system does not need to be used against a wall, but can be compressed between the ceiling and the floor.

At last year's 100% Design show in London, Vitsoe displayed an original Audio 1 gramophone and loudspeaker designed in 1962 by Rams—who intended the smaller bay width of Vitsoe's 606 Universal Shelving System to match the width of Audio 1. Vitsoe also supported 100% Design's press office by supplying shelves to display the press packs. Moss dna, New York City.www.mossonline.com

CIRCLE 216

Flexible pole system creates shelving, and rooms, without walls

Dave and Julie Scheu, the husband-and-wife partners in the St. Louis–based furniture design firm UrbanWorkshop, applied their architectural training to devise rooms-on-poles that can define a loft or other open space by simply wedging between the ceiling and floor. PogoHome rooms are constructed of maple, cherry, white oak, or walnut, with steel fittings. Made to order in heights up to 14', the poles adjust 5" up or down from the specified height. The handcrafted steel parts are given a black-oxide finish, and the white rubber tip recalls the bottom end of a pogo stick. The three original pogoHome rooms (pogoCloset, pogoLibrary, and pogoGarden) consist of stacking wood components that interlock with the arms to form sturdy poles to support belongings. The three newest rooms (pogoGallery, pogoLounge, and pogoDen) use expanding inserts and a series of holes to allow for more design freedom. UrbanWorkshop, St. Louis. www.urbanworkshop.us

CIRCLE 217



PogoHome rooms (left to right): pogoLibrary, pogoGallery, pogoLounge, and pogoDen.



▲ Origami-inspired shelving

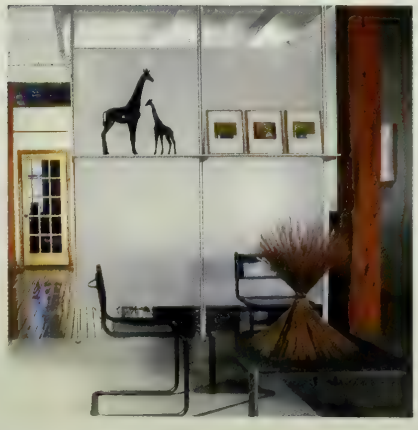
The Bias Shelf system is constructed of a single piece of high-grade sheet aluminum that is folded to provide shelf space and aesthetic flare. Each wall-mounted modular shelf is powder coated for durability and is available in nine colors, allowing for countless design configurations. Nüf Design, New York City. www.nufdesign.com **CIRCLE 218**



◄ Protecting Asian treasures

Spacesaver incorporated space-saving solutions into San Francisco's Asian Art Museum's lower level for collection storage and preservation. Included are compact art racks for framed pieces, stationary pallet racks for large sculptures, and more than 200 environmentally controlled cabinets on high-density mobile systems for a range of artifact storage. Spacesaver, Fort Atkinson, Wis. www.spacesaver.com **CIRCLE 221**

► Shelving support pole



The latest addition to the Rakks product line is the PC4 support pole featuring threaded compression mounts for secure installation between floor and ceiling. Suitable for a range of residential, commercial, and retail display applications, this 1½" x 1½" extruded-aluminum support can accommodate ceiling heights up to 12'. The pole is stocked in clear- or black-anodized-aluminum and white-powder-coated finishes. Rangine, Millis, Mass. www.rakks.com **CIRCLE 222**



◄ Make space for stuff

The Crux system (left), from the Brooklyn design team/manufacturer hivemindesign, is a walnut-veneered storage unit that encases a series of slotted aluminum components. The interchangeable components accommodate clothing storage with a hanging rack, as well as book storage with built-in bookends. The firm also offers a low wooden case for LP and electronics storage called the Crux credenza. This unit is veneered in walnut and encases slotted aluminum components and gray glass sliding doors. hivemindesign, Brooklyn, N.Y. www.hivemindesign.com **CIRCLE 219**

▼ Freestanding configurable storage

MKS Designs introduces Modstor, a freestanding configurable storage system suitable for commercial or residential use. Modules consist of a frame, drawer, and shelf; they come in wide or narrow, with short or tall drawers, and connect left to right as well as stack top to bottom. Frames, drawer baskets, and shelves are made from powder-coated steel, while drawer fronts and backs are high-density polyethylene or solid hardwood. MKS, Cambridge, Mass. www.mksdesign.com **CIRCLE 220**



► Mobile office storage

Bretford and Formway Design introduce the Traffic storage line featuring the Boxstore and Mobile Pedestal. A range of interior accessories, including pullout shelving, flat shelves, or media drawers, can be employed to customize Traffic for specific storage issues. Boxstore is available in more than 20 combinations of height, width, and door options, and the Mobile Pedestal can double as cushion-top seating. Bretford, Chicago. www.bretford.com **CIRCLE 223**



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The following pages highlight introductions from this year's Milan Furniture Fair, which took place from April 14 to 19 in venues throughout the city. In sharp contrast to many of the conceptual or extravagant designs on display in off-site exhibits, manufacturers this year offered products that represented a "back-to-basics" approach focusing on fundamental themes of structure, scale, transparency, and ornament. Seating furniture featured structures that were either completely exposed or nonexistent and were offered in a greater variety of sizes to accommodate a "larger" audience. In addition, forgotten classics were reintroduced alongside products from a talented new crop of designers. Josephine Minutillo





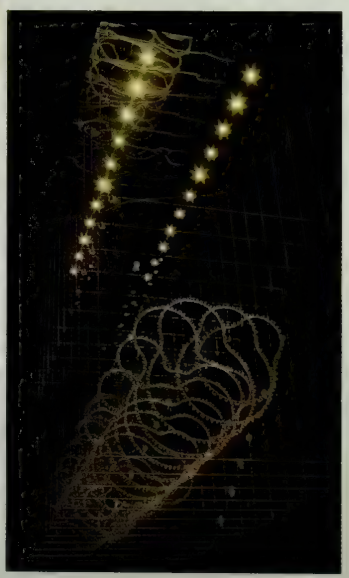
Clockwise, from top to bottom left: Dutch Pieces, by Jurgen Bey; Architettura Romantica, by Ettore Sottsass; Sky, by Matali Crasset for Swarovski's Crystal Palace; and Robert Stadler's three-dimensional Pools.



Milan's 43rd Annual Salone del Mobile: A weeklong celebration of design

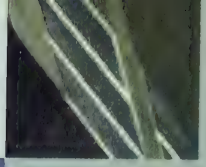
Milan's Salone del Mobile is unlike any other furniture fair you're likely to attend. For an entire week every April, this energized city is transformed into a haven for design afficionados from across the globe—and it's not just furniture lovers who come to take part in the spectacle. From retailers and architects to fashion designers and car makers, attendees come in growing numbers (190,000 this year) to view the countless product offerings and exhibits. On this occasion, the event was redubbed Milan Design Week to reflect its far-reaching appeal.

According to Paola Antonelli, curator in the Department of Architecture and Design at the Museum of Modern Art in New York and veteran visitor of the Salone, "the fairgrounds are where it all started, but the city has taken over and turned this fair into a very different kind of event." Antonelli notes the Italians' "flair for scenography" as a main draw, but also acknowledges that the event is an ideal opportunity to meet up with colleagues and other professionals passionate about design.



Fairground displays and off-site exhibits ranged from minimal to stunning. Swarovski's Crystal Palace show was once again a highlight as it presented chandeliers from a new roster of designers, while Moroso's Happy Ever After exhibit by Dutch designer Tord Boontje (see this month's Profile on page 240) drew lots of attention, as well. Smaller displays dotted the city, so walking the streets of Milan during Design Week meant stumbling upon an unexpected array of objects and installations, including works by veritable masters of design like Ettore Sottsass and Andrea Branzi to contemporary luminaries, as in the Vanishing Point show featuring work by Robert Stadler, Konstantin Grcic, and Jurgen Bey. A host of student exhibitions were on display, as well.

Galleries, stores, fashion houses, and even eateries throughout the city took part in the festivities this year. In addition to the major furniture showrooms like B&B Italia and DePadova, such prestigious brands as Dolce & Gabbana, Missoni, and Acqua di Parma staged presentations of their own, making Design Week in Milan an event for the entire city to enjoy. *J.M.*



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◄ Cover story

A company whose hallmark has always been upholstered furniture, Moroso presented a small chair this year whose upholstery had everyone talking. Designed by Konstantin Grcic, Dummy derives its form from a single sheet of polyurethane foam gently squashed over a supporting structure. The brightly colored, collapsible chair covers were part of a diverse presentation that included seating, tables, and shelving ranging from minimal and traditional to innovative and eclectic. Europrojects, Miami. www.moroso.it **CIRCLE 224**

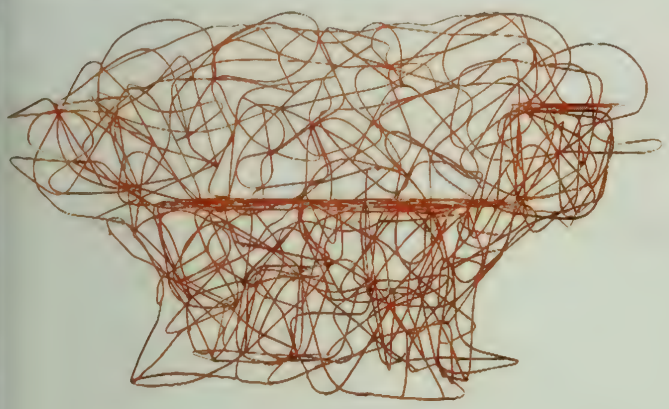


▲ Rock steady

Specialists in solid-wood furnishings since 1920, Italian manufacturer Riva presented a new collection by American architect Terry Dwan. Called Strong_Box, the collection includes a table, stools, and a console (above). An homage to wood's material qualities, the witty design combines a simple top with slanted legs that appear unsteady but in fact form a stable structure. Made entirely of reforested oak and completely hand-finished. Furnitalia, Los Angeles. www.riva1920.it **CIRCLE 225**

▼ Airbrushed

Humberto and Fernando Campana continue to push the envelope with their designs for Edra. This year, they presented Corallo, an armchair made from steel wire and finished in epoxy paint in a coral color. Corallo was born from a sculpture Humberto made during a metal course in 1990, which he describes as an "investigation in drawing using only lines floating in space." Its irregular weave is curved by hand and unique to each chair. Moss, New York City. www.mossonline.com **CIRCLE 226**





▲ Striptease

Tom Dixon describes his recent work as an "experiment in reductionism." His presentation included the Soft Box series of simple box and cylindrical lights, the Tube series of leather-upholstered chairs and tables with a stainless-steel-tube structure, and the Wire series of indoor/outdoor stacking chairs (above). Built "from the inside out," these products are stripped to their basic components, making structure and skeleton the design itself. Centro Modern Furnishings, St. Louis. www.centro-inc.com **CIRCLE 227**



◄► Formfitting

Rejecting the styling that has become so prevalent among the Milan offerings each year, Jasper Morrison created Oblong, a structureless sofa composed of individual seaters connected by zippers. Much like a beanbag, Oblong molds itself to the sitter's body. "The beanbag has always impressed me as a totally original piece, with regard to how we sit," says Morrison. "I wanted to take it further and offer a more traditional function." Limn, San Francisco. www.limn.com **CIRCLE 228**



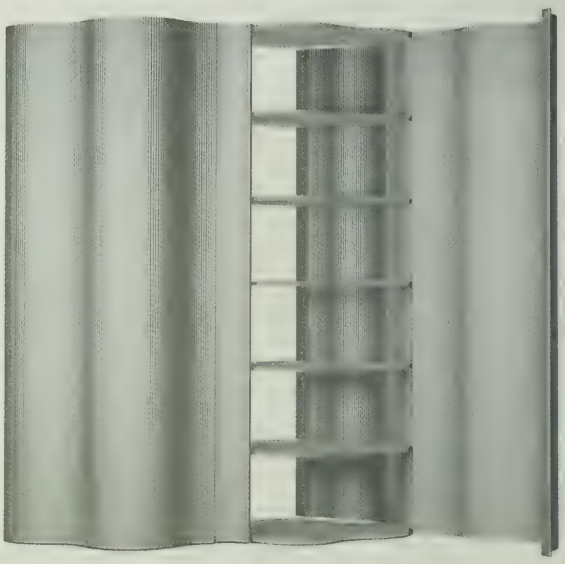


▲ Striped collection

Having experimented in new materials like die-cast aluminum with great success, Magis is no longer just a plastics company. This new outdoor seating collection by French brothers Ronan and Erwan Bouroullec includes armchairs, low chairs, stools, tables, chaise longues, and sun beds. Visually arresting, the widely spaced methacrylate slats are wrapped around thin, steel-tube frames. Available also with padded covers. The Terence Conran Shop, New York City. www.conran.com **CIRCLE 230**

▼ In layout

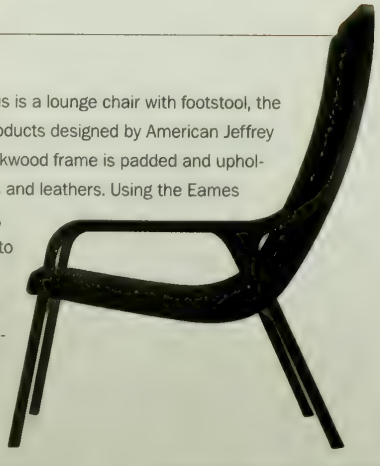
Dominating Alias's stand this year, the organically shaped Layout functions as a container system, room divider, or corner unit. Monolithic at first glance, the units contain curved doors that open to reveal interior shelving. Designed by Michele De Lucchi, the system was developed following an exploration into the expressive potential of extruded aluminum, a favorite material of Alias. Frametable, a table with an aluminum structure introduced by Alias last year, was also presented in stunning new finishes. Alias USA, Huntington Station, N.Y. www.aliasdesign.it **CIRCLE 229**





◄ Quick-change artist

Part of a new collection by Alfredo Haberli for ClassiCon, Hypnos (left) is a chair, couch, and bed at the same time. Designed with flexibility in mind, Hypnos converts easily from a large chair to an uncomplicated bed for overnight guests, or a daybed for quick naps. The easy-to-clean footrest allows you to keep your shoes on while napping. Also part of the new collection is Skaia, a large table with a thick wooden tabletop that accommodates up to 12 people and is suitable for conferences or dining. On the opposite side of the spectrum is Nais, a small, lightweight wire chair in various colors. M2L, New York City. www.m2lcollection.com **CIRCLE 231**



► The big scoop

The generously sized Marcus is a lounge chair with footstool, the first pieces in a family of products designed by American Jeffrey Bernett for Montina. The oakwood frame is padded and upholstered in a variety of fabrics and leathers. Using the Eames lounge chair as a reference, Bernett designed the chair to be "large enough to evoke comfort and relaxation and be appealing to a wide audience." Property, New York City. www.propertyfurniture.com **CIRCLE 232**

► Super-sized

A frequent designer for Poltrona Frau, Luca Scacchetti has updated the traditional armchair with Size. The first armchair to come in three versions made-to-measure for three different body sizes, Size also introduces minor deformations to the classic styling with slanted seats and arms and disproportionately slender feet. Accessories in the same or contrasting colors include a headrest, cushion, and side and back pockets. Poltrona Frau, New York City. www.poltronafrau.it **CIRCLE 233**



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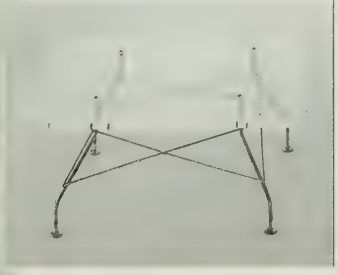
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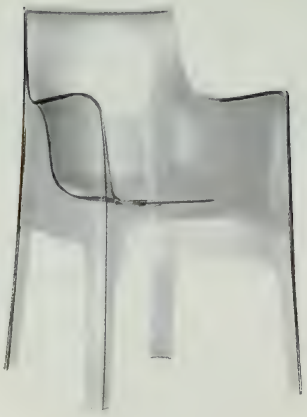
Product Briefs Milan: Transparency

▼ Clear-cut

Having perfected the technology used to create transparent polycarbonate furnishings, Kartell showcased a range of products around the theme of transparency, including new designs from longtime collaborators Philippe Starck and Ferruccio Laviani and a small table by the newest addition to their reputable roster of designers, Patricia Urquiola. Older designs were given a new look as well, with some striking results. The Glossy series (right), by Antonio Citterio, features the same light-chromed-steel structure of the original but has been expanded to include tables with new dimensions, shapes, and functions, and new transparent surfaces. The folding top of Citterio's Battista trolley (left) was also updated. Kartell US, New York City. www.kartell.it **CIRCLE 234**







◄ Friendly apparition

Young Japanese designer Tokujin Yoshioka has collaborated frequently with Driade both as a product and exhibition designer, last year staging the *Clouds* show in honor of the company's 35th anniversary. This year, he presents Kiss Me Goodbye, an armchair that combines his affinity for organic forms with his love for transparency. The chair is constructed of transparent polycarbonate and is intended for indoor use only. Current, Seattle. www.driade.com **CIRCLE 235**

► See-through sink

PH is a freestanding, floor-mounted wash basin designed by Piero Lissoni. The column is made of 310-degree bended plates in .47"-thick transparent crystal. The bended transparent-crystal basin is attached to the column with a polyurethanic bonding agent. In the marble version that is also available, the column is extracted from a single block of Carrara marble with an excavated basin. Boffi Soho, New York City. www.boffi.com **CIRCLE 236**



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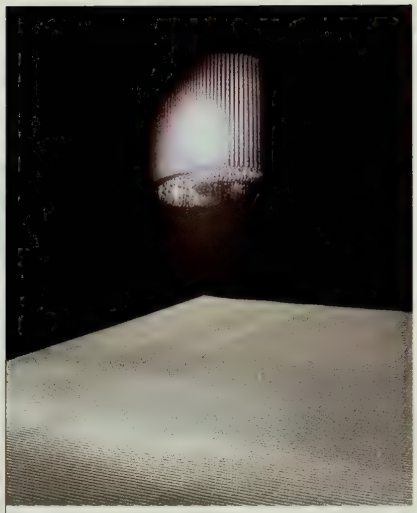
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► Pleasing patterns

Milan-based Spanish designer Patricia Urquiola's products were ubiquitous this year—at the fairgrounds, in showrooms, and at off-site venues. Intended for indoor use only, her Flo series for Driade (top) features large and small tables, chairs, and stools whose painted steel structure is covered with wicker in several decorative patterns or uniformly in a natural color with thin canes. Rosa and Asperala (bottom) are large floral-patterned rugs Urquiola designed with longtime friend and frequent collaborator Eliana Gerotto for Paola Lenti. The sculptural quality of the rugs is enhanced by the alternating high and low relief used to reproduce the leaves, veins, petals, and stems of the flower motif, resulting in a sophisticated and contemporary graphic effect. Current, Seattle. www.driade.com **CIRCLE 237** Paola Lenti USA, San Diego. www.paolalenti.com **CIRCLE 238**



▲ Metallic mood

With his new designs for Sawaya & Moroni, renowned French architect Dominique Perrault uses elementary forms and basic materials to create objects with a curiously Baroque feel. Both the lamp and rug pictured here (above) are made from metal netting. Metal links form pleats that shape the sinuous volume of the lamp's diffuser, to which cascades of Swarovski crystals have been added. Limn, San Francisco. www.limn.com **CIRCLE 239**

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▲ Tracing tables through history

In 2004, Cassina purchased the worldwide exclusive reproduction rights for products designed by Charlotte Perriand. The new collection features a variety of furnishings, including seating, tables, and storage units, created over the course of six decades. Ospite (left), from 1927, is the earliest: an extendable, chromed-steel table reflecting the spirit of the time by offering practical solutions for everyday living. Ventaglio (right), designed almost 50 years later, shows the evolution of Perriand's design approach and lifestyle. Created for her chalet, the unusual tabletop provides versatility in a less formal concept and is available in natural or black-stained oak. Cassina USA, New York City. www.cassina.it **CIRCLE 240**

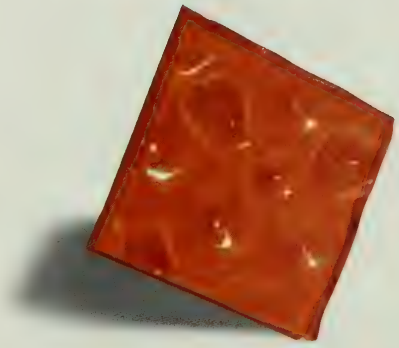
▼ Found object

Among the lesser-known of Achille and Pier Giacomo Castiglioni's designs, the Splugen stool has been reintroduced by Zanotta. Named after the Milan beer hall for which it was designed in 1960, Splugen's tubular steel frame incorporates a footrest and leather-upholstered cushion. It can be painted in black or aluminum. Centro Modern Furnishings, St. Louis. www.centro-inc.com **CIRCLE 241**



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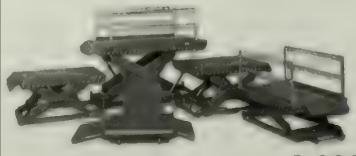


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Presentation Leader: David Childs

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▲ Turn over a new leaf

The Swedish design partnership of Claesson Koivisto Rune was founded in 1995 as an architectural office. In recent years, its distinctive, Minimalist designs for international manufacturers, including leading Italian companies like Cappellini, Boffi, and Living Divani, have been making their mark in Milan. Their newest design for Living Divani is a series of seating elements called Leaf. Leaf's lightweight, painted steel frame supports a fixed cushion folded over on itself to striking effect, particularly with two-tone upholstery (above). Current, Seattle. www.livingdivani.it **CIRCLE 242**



▼► New kids on the block

Having received an enthusiastic response when it presented its collection for the first time at the Cologne furniture fair this past January, the new Danish label Hay was invited to show its stuff in Milan. The company's sizable display—outside the fairgrounds but alongside such notables as Tom Dixon, SCP, and Moooi at SuperStudioPiù—included a colorful assortment of unusual seating. Other One, One, and Round One, a series of unique lounge chairs (below), were designed by Leif Jørgensen. Another lounge chair (above) with matching ottoman, whose upholstered cushions are supported by a cantilevered plastic frame, was shown for the first time in Milan. The collection also includes Minimal-style dining tables and chairs, beds, and accessories. Hay, Horsens, Denmark. www.hay.dk **CIRCLE 243**



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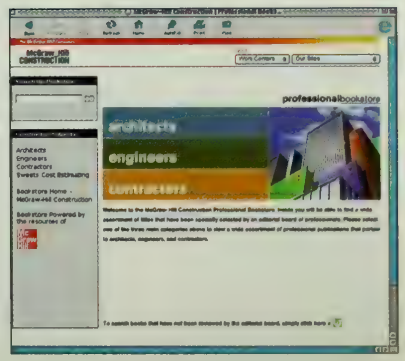
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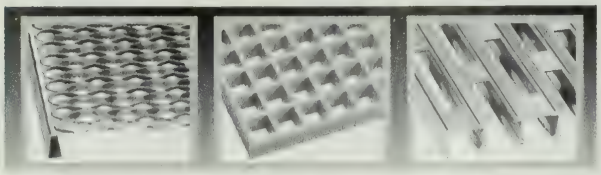
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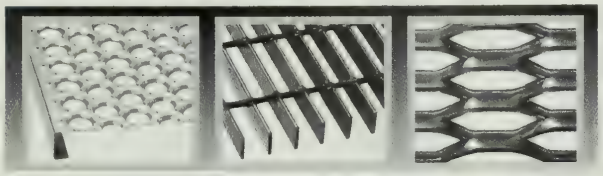
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Product Literature

Guide to raised floor systems

A comprehensive 48-page guide for building a raised-floor-foundation system is now available from the Southern Pine Council (SPC). *Raised Floor Systems: Design and Construction Guide* features detailed illustrations, photographs, and cost comparisons, and addresses basic construction elements and a range of related topics, such as moisture-control, soils and site preparation, foundation types, termite-resistant framing, design loads, span tables, and floor framing. Southern Pine Council, Kenner, La. www.southernpine.com **CIRCLE 245**

Mobile-storage guide

A new 20-page guidebook on floor-loading options from Spacesaver has been prepared as an introduction to floor loading when high-density mobile storage systems are being considered for new, existing, or adaptive-reuse construction projects. Spacesaver Corporation, Fort Atkinson, Wis. www.spacesaver.com **CIRCLE 246**

Floor-covering catalog

A new product catalog from Freudenberg Building Systems offers a comprehensive guide to the company's entire product offering, including four new product lines and more than 75 new colors. Freudenberg Building Systems, Lawrence, Mass. www.norarubber.com **CIRCLE 247**

Roofing-tape brochure

Eternabond's new roofing brochure provides information on the company's full line of tapes. A CD that accompanies the brochure provides multimedia information about roof and seam repair, cold-weather installations, and flashing and coding repairs. Eternabond, Hawthorn Woods, Ill. www.eternabond.com **CIRCLE 248**



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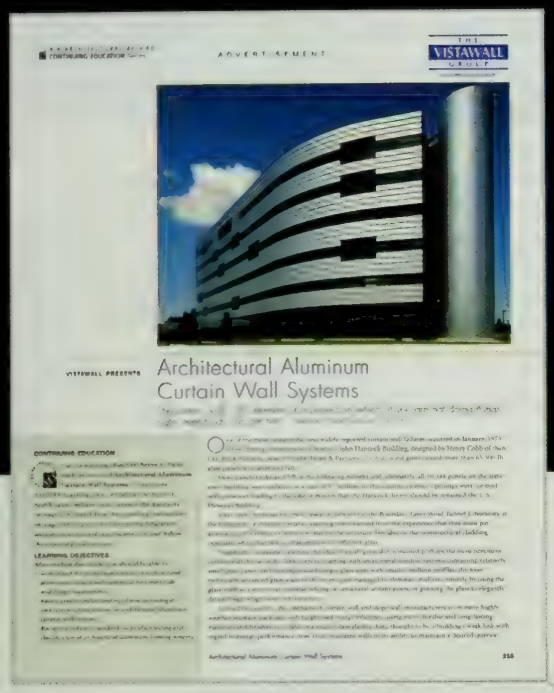
Nora's redesigned site reflects the company's new corporate-design and rubber-flooring range **www.norarubber.com**

Wilsonart's new site provides a complete overview of its laminate-flooring products **www.wilsonartflooring.com**

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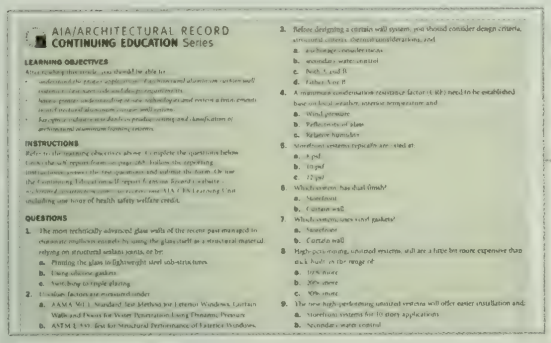
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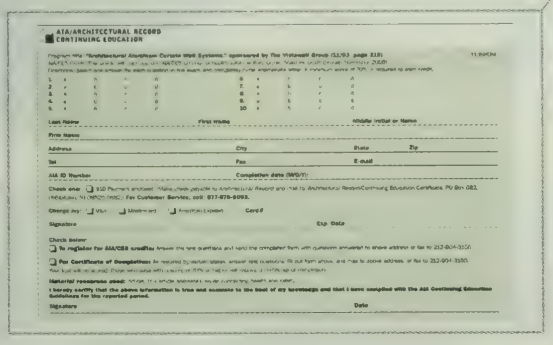


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Product Literature

Steel framing products

Dietrich Metal Framing now offers a 230-page *Metal Framing and Finishing Catalog* detailing the company's various products, systems, and services. The catalog is divided into 10 major product sections, including interior framing; exterior framing; floor framing; roof framing; fire-rated assemblies; metal beads and trims; vinyl beads and trims; paper-faced beads and trims; veneer, stucco, and plaster beads and trims; and metal lath. Dietrich Metal Framing, Columbus, Ohio. www.dietrichindustries.com **CIRCLE 249**

Sink specification CD

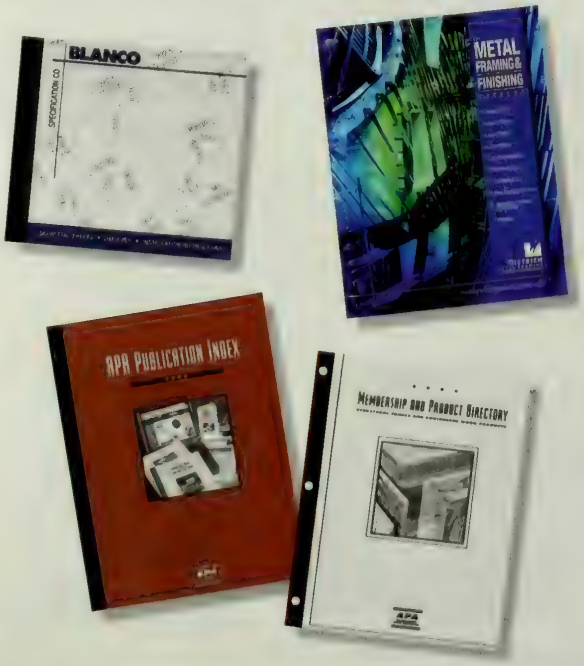
Blanco America has introduced a new specification CD that features sink installation instructions and submittal sheets for Blanco sinks and faucets in PDF format for easy downloading and printing. The CD also includes DXF files with electronic sink cutout information for use with CAD-based software programs and CNC routing machinery. All files are cross platform for use with PCs and MACs. Blanco America, Cinnaminson, N.J. www.blancoamerica.com **CIRCLE 250**

APA publications

The Engineered Wood Association recently updated both its *Member and Product Directory* and *Publication Index* for 2004. The *Member and Product Directory* lists all APA member manufacturers and sales offices, the engineered wood products each member produces, and a list of mill numbers. The 2004 *Publications Index* provides a listing of design and construction guides, product guides, case histories, builder tips, and industrial publications. The publications are available online at the APA's Web site. The Engineered Wood Association, Tacoma, Wash. www.apawood.org **CIRCLE 251**

Green reference guide

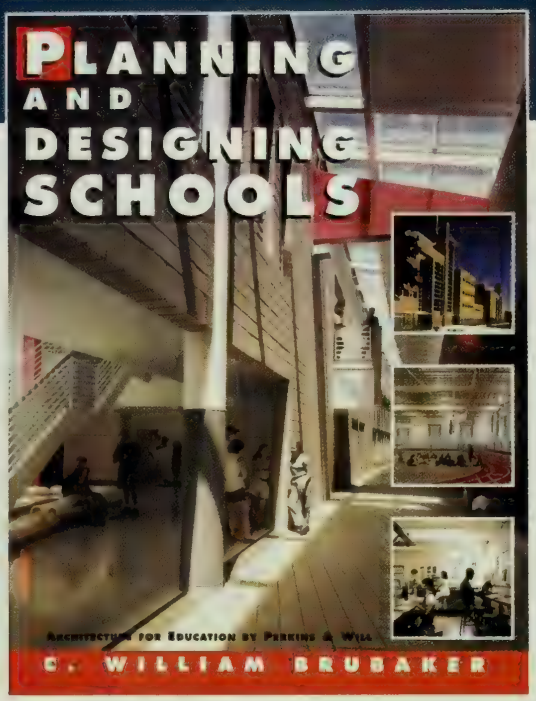
Invista, manufacturer of Antron carpet fiber, in association with the International Facility Management Association, has developed the *Green Glossary for High Performance Buildings*. The *Green Glossary*, a lexicon containing 360 standardized environmental terms, is intended to serve as a reference guide for those involved in the construction, design, or management of high-performance green buildings and is endorsed by leading industry associations, including the U.S. Green Building Council. Invista, Wilmington, Del. www.invista.com **CIRCLE 252**



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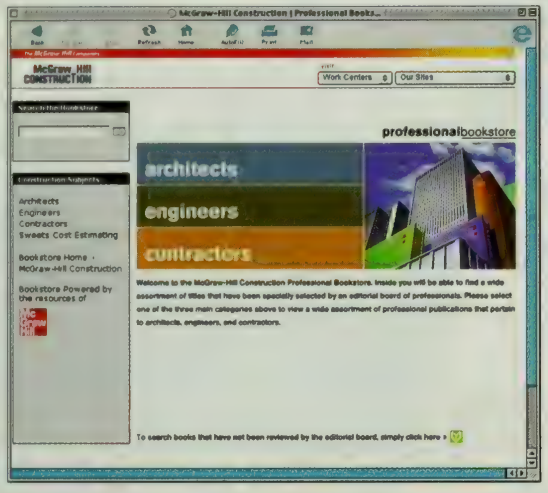


In *Planning and Designing Schools*, award-winning architect William Brubaker shares his knowledge and expertise, gathered over thirty years and more than 200 school projects, to show how to create practical, yet pleasing answers to the challenges of school design. This essential resource covers every phase of school design, giving complete information on such topics as master planning, energy efficiency, indoor air quality, and much more – and includes 22 informative case studies.

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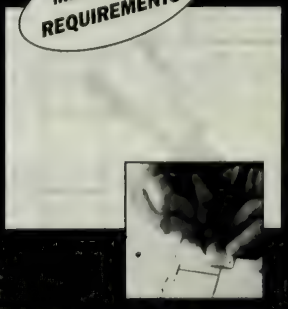
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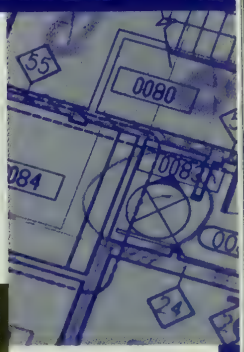
The AIA, together with NCARB, has revamped the 1992 *Supplementary Education Handbook*. The new, Web-based handbook, the *Emerging Professional's Companion*, will help interns obtain the IDP credit they need to become licensed architects.





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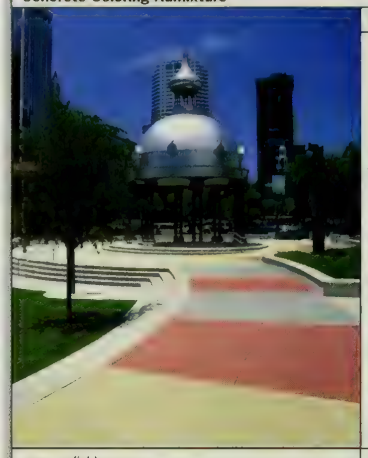
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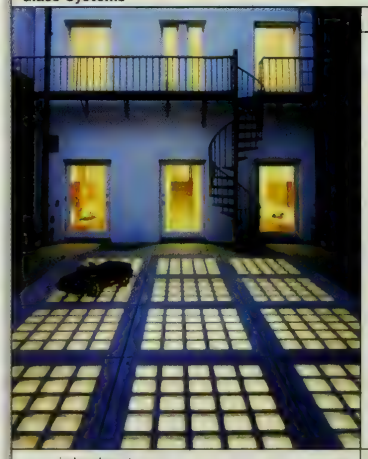
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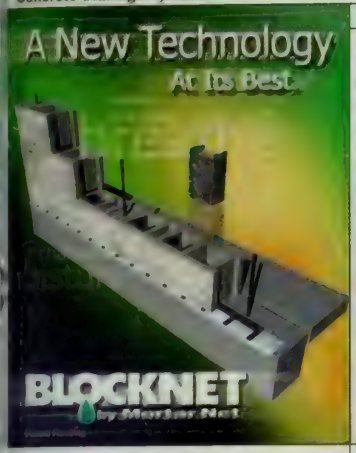
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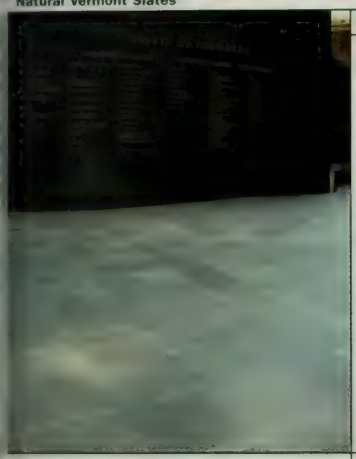
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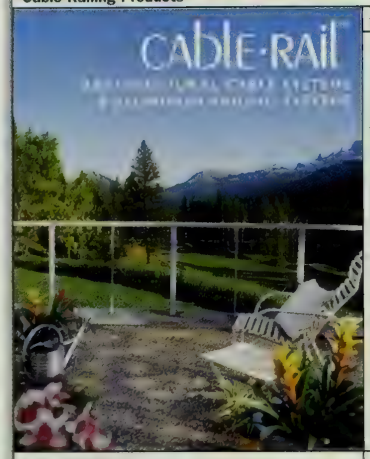
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Melton Classics, Inc.

Architectural Products



6 Wood & plastics

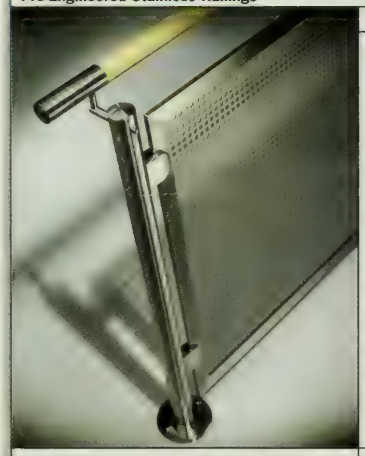
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16

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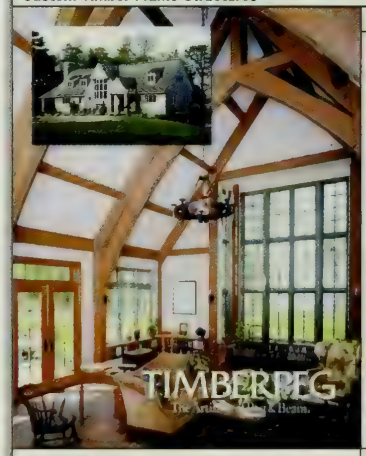
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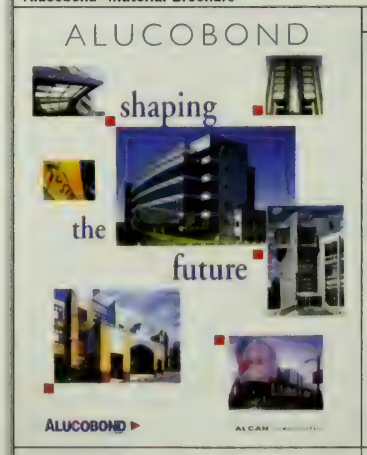
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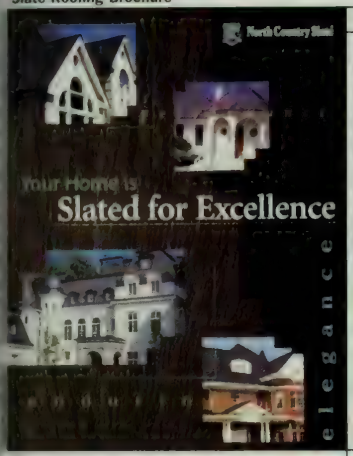
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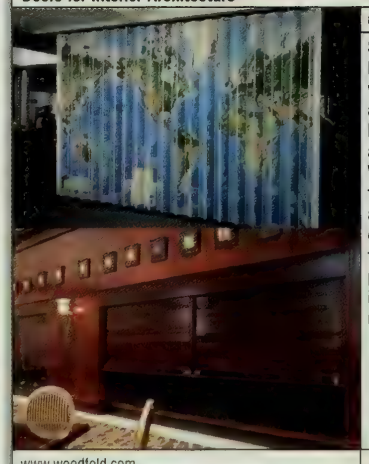
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Precut Saunas | 800-354-3342



13 Special construction

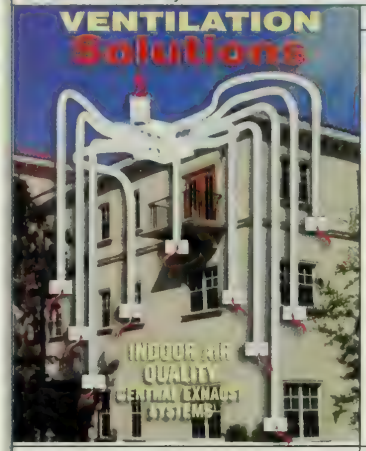
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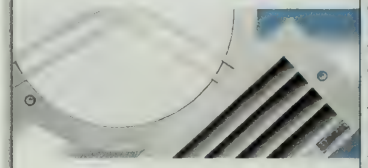
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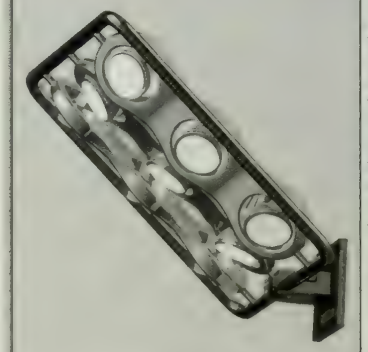
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Predictability: Does the flap of a butterfly's wings in Brazil set off a tornado in Texas?



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October 29–31, 2004

Controlling Chaos

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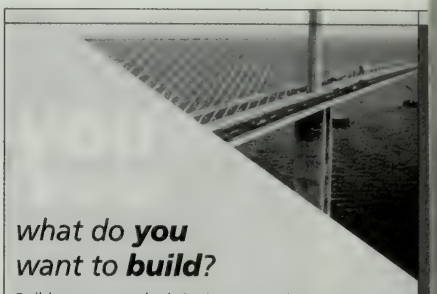
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Tord Boontje: A modern craftsman with a human touch

Interviewed by Josephine Minutillo

At a time when design seems to be dominated by sleek, ultra-modern products that rely more on gimmicks than thought, Tord Boontje has set himself apart by creating work that recalls a more Romantic age. The Dutch-born, London-based designer has been described as working on the cusp of design and craft, melding up-to-date computer technology and manufacturing techniques with designs that have the look and feel of handcrafted objects. In addition to his studio's own production, Boontje has collaborated with fashion designers including Alexander McQueen, and has designed lighting for Swarovski. His Happy Ever After *exhibit for Moroso was a highlight of this year's Milan Furniture Fair.*

Q: *How did the* Happy Ever After *exhibit with Moroso come about?* Moroso asked me to do it as a starting point for a new relationship designing furniture. For this show, the emphasis was on fabrics and upholstery. I've always been very interested in fashion. Fabric has been used on the body in amazing ways, but always very traditionally with furniture, so I wanted to think about new ways of using it, which involved embroidery and beading. We also used wool that was cut by machine in intricate patterns.

Your earlier work is very Minimal. Was it a conscious decision to switch to a more decorative style? It was a very conscious decision. My earlier projects were about recycling and making things out of nothing. These were objects that were simply-made, plain, and functional—making something elegant using basic materials. In 2000, my daughter was born, and I began to think about the kind of environment I wanted to live in for myself and my family. I do not want my own home to be a plain white box, but something more warm and loving. I began to do research and became enamored of decorative objects from the 18th century, especially English woodworking and embroidery. As designers, we're taught to create things that are automated and neutral. I started to question this.

In making that switch, your work has gone from very low-tech to very high-tech. Handcrafted items are labor-intensive, but with today's technology, we can do things that weren't possible even five years ago. It is easy to make a drawing on a computer and send it to a factory for production. For example, the Wednesday light [a stainless-steel garland that wraps around a bulb] is incredibly intricate and detailed, yet machine-made. The whole light is ornament.

You've designed expensive, one-off products and now, mass-produced, affordable ones. I get equal satisfaction from both. What I hope to do is make affordable, democratic things, not only things people can enjoy in magazines. On the other hand, the projects I did for Swarovski gave me a lot of freedom to experiment, so you need both. There is a balance there.

The word decoration *often has a negative connotation in Modern architecture and design. What are your thoughts?* Decoration is not a negative term for me. The original ideas behind Modernism got hijacked somehow and the term *Modern* has come to mean something that is very stylistic or minimal—something devoid of the original, important emotional qualities of Modernism. I try with my work to bring back sensuality and human qualities in the spaces in which we live and the objects with which we live. And to do it in intelligent, efficient, and affordable ways. In a funny way, what I'm doing is very modern.

Photograph by Riccardo Bianchi of Boontje inside his exhibit for Moroso



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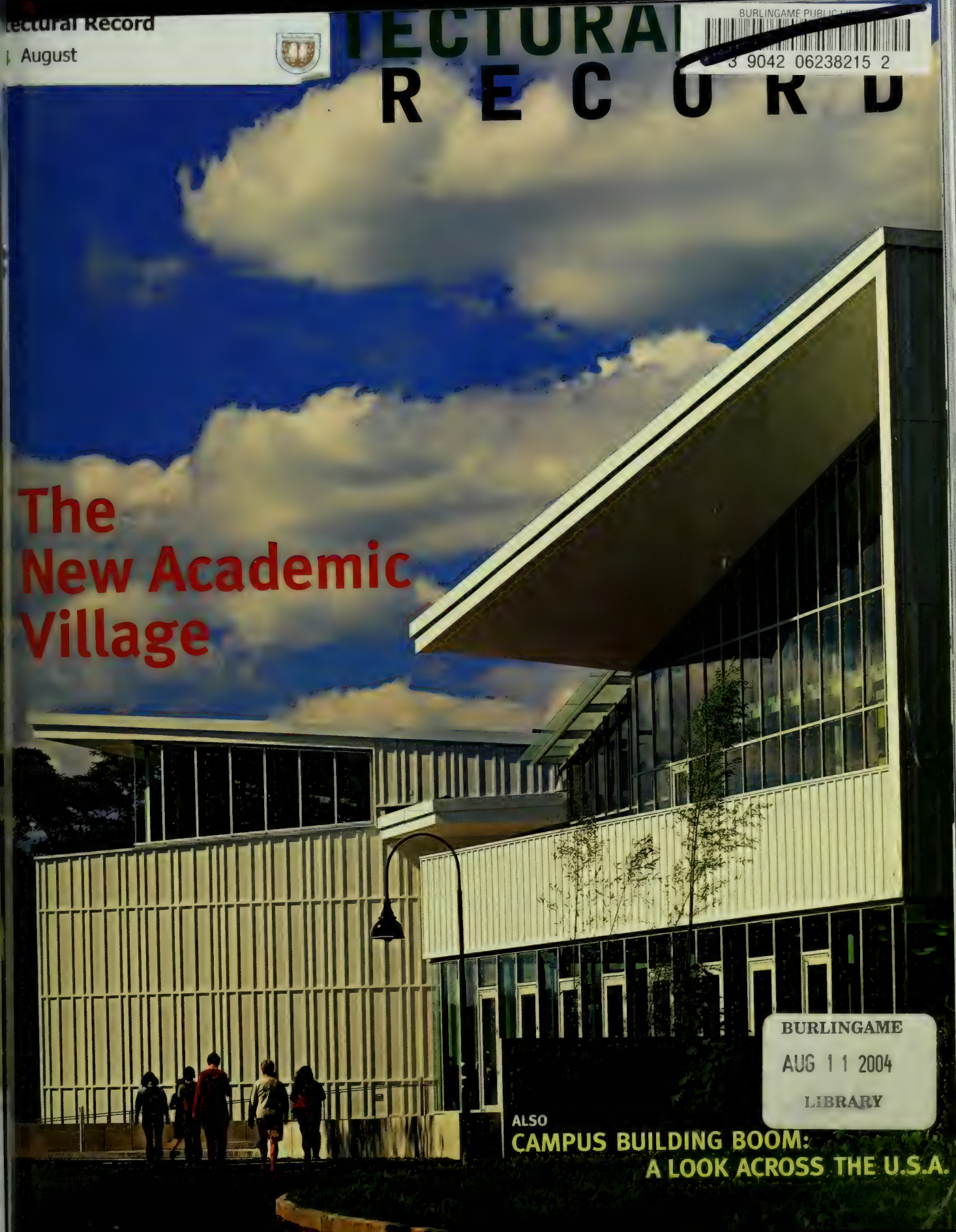
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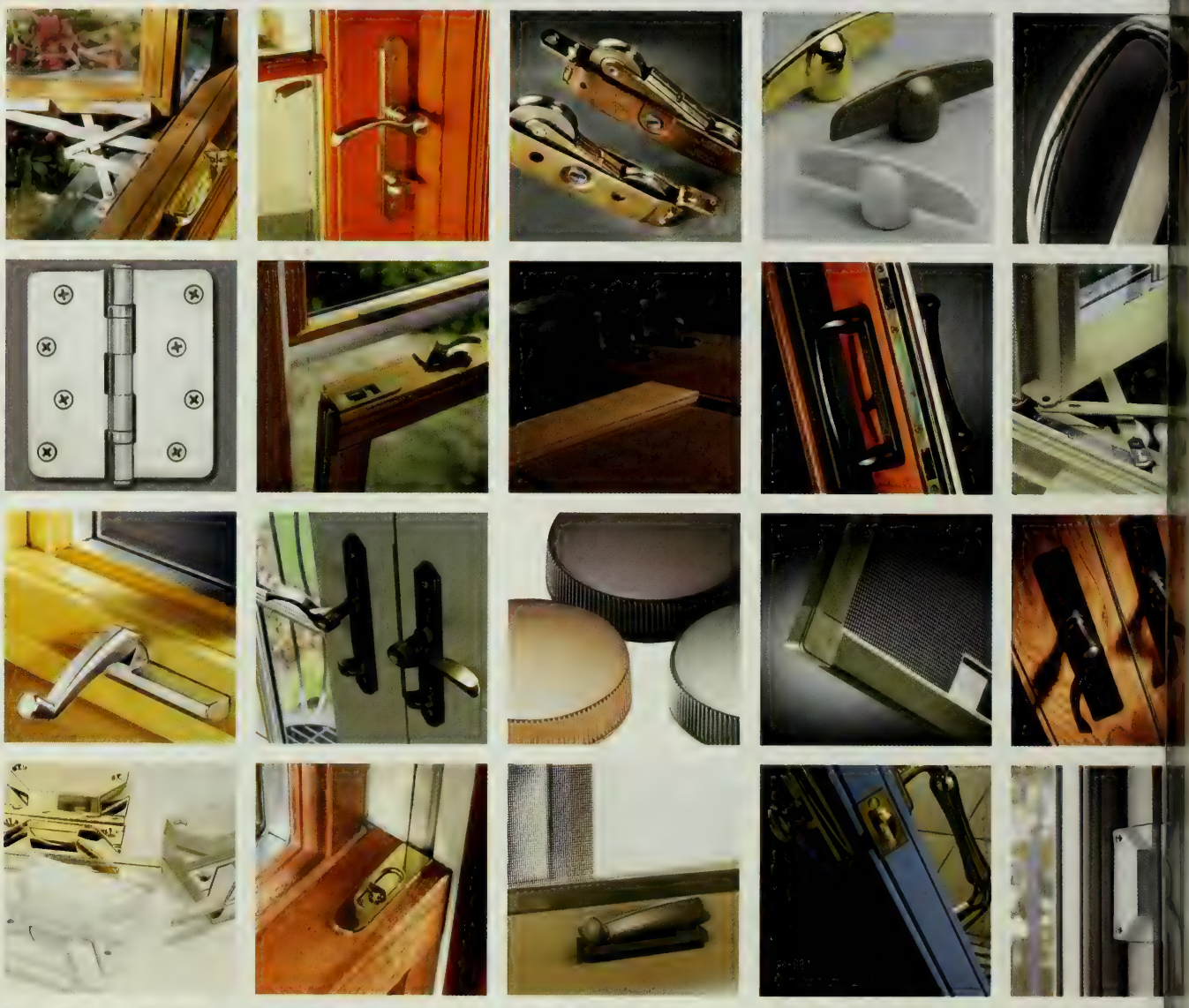




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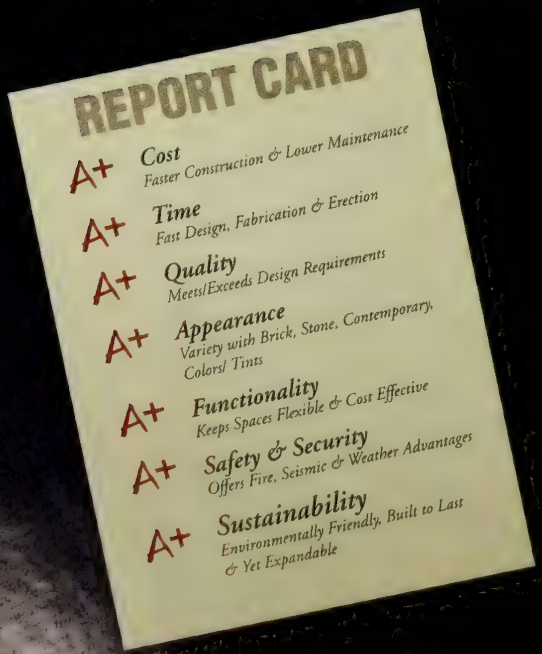
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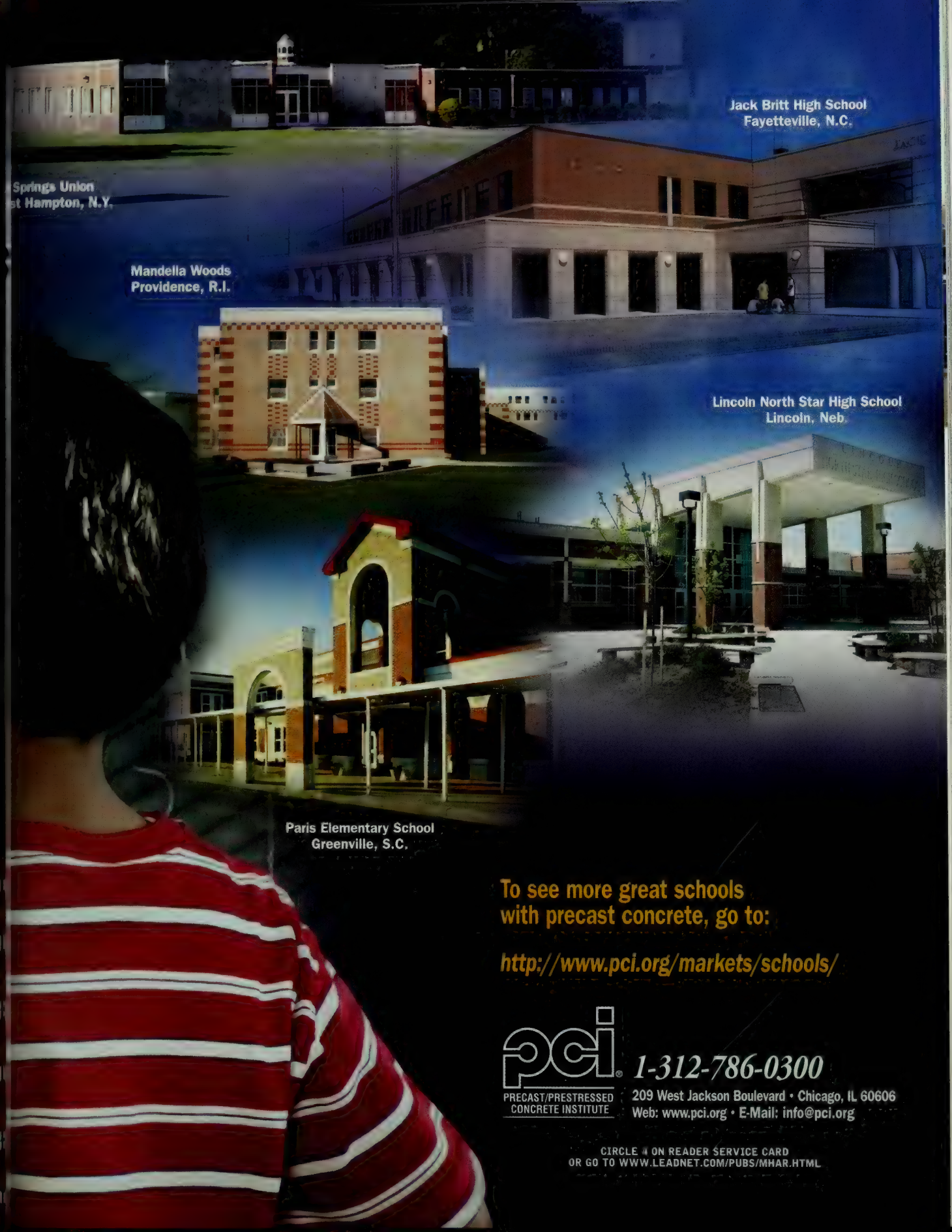
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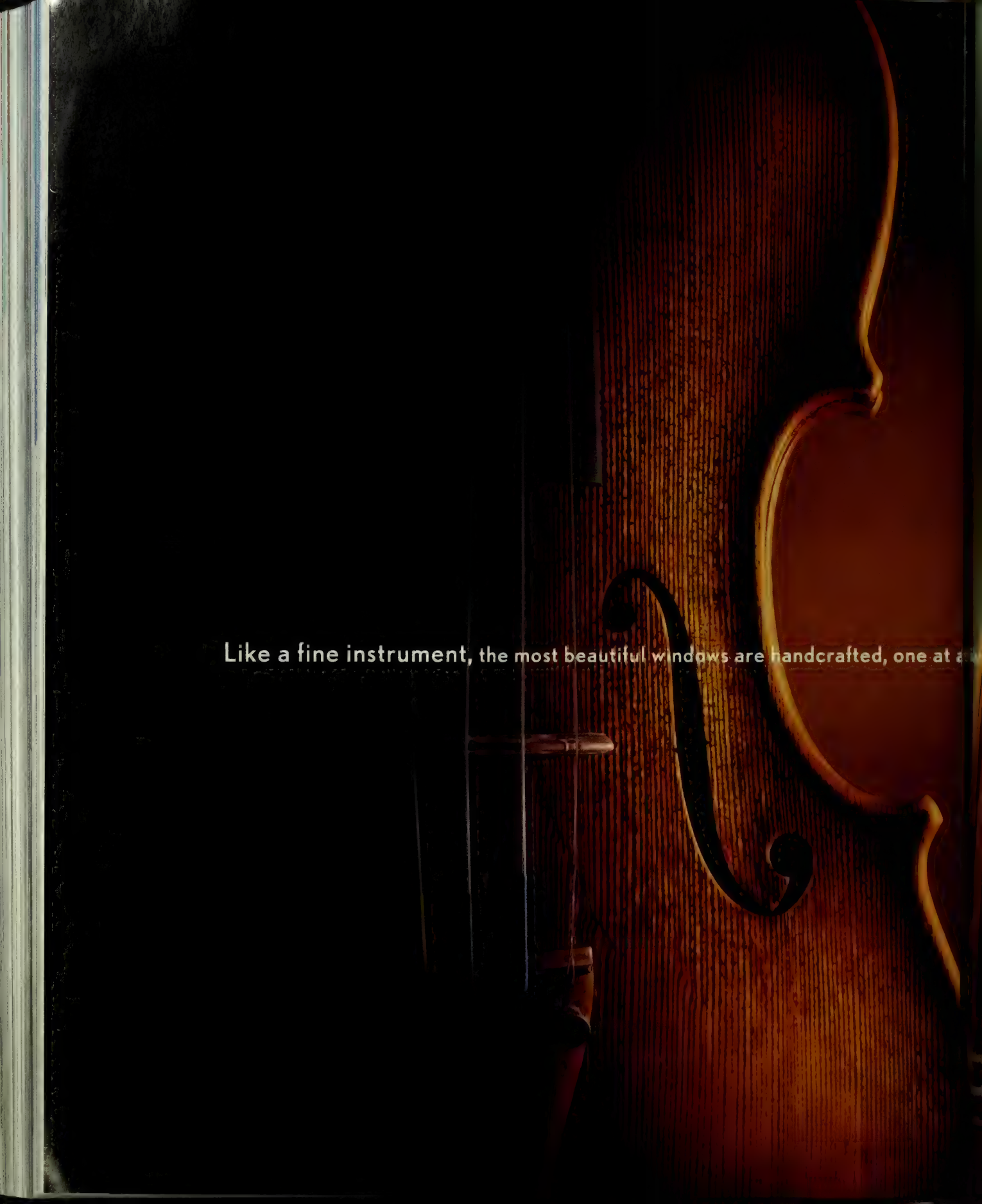
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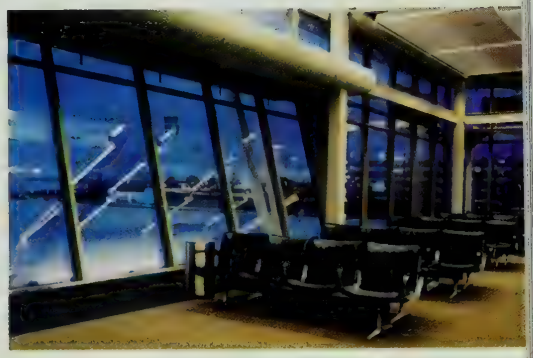

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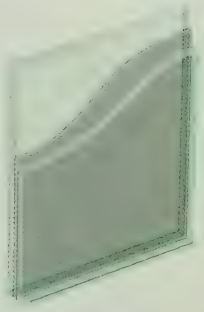


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On the Cover: *Smith College Campus Center. Photograph by Jeff Goldberg/Esto*
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* You can find these stories at **www.architecturalrecord.com**, including expanded coverage of Projects, Building Types Studies, and Web-only special features.

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Project Portfolio

Architects are transforming student life and learning on college and university campuses. Renovations and expansions of these institutions are highlighted this month.

Products

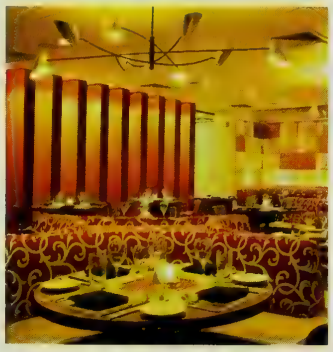
Glass and glazing to maximize views, privacy, and energy-efficiency is this month's focus. You'll also find the submission form for the 2004 Product Reports, updates to our Green Product Guide, and Product of the Month.

Daily Headlines

Get the latest scoop from the world of architecture.

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The Ray and Maria Stata Center for Computer, Information, and Intelligence Sciences, Cambridge, Mass. Photography: © Roland Halbe.



James Hotel, Scottsdale, Arizona. Photography: © Eric Laignel.

Building Types Study: Hotels

We're checking into some of the best designed hotels around the world. No reservations? No problem. **New** to our Web site this month, Special Correspondent, Suzanne Stephens, will lead you through a tour of the hotels including some that are not in the pages of our magazine.



Polyhouse. Venice, California. Courtesy XTEN Architecture.

archrecord2

Can two architects with varying backgrounds agree on a certain type of architecture? XTEN Architects prove that it is entirely possible. Also, University of Texas students are doing constructive things with their time this summer.

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CAD Center, Tokyo. Photography: © Toshio Kaneko.

Lighting

An office in Tokyo as well as a nightclub in New York benefit from dramatic uses in lighting. This month we also find that collaborations in lighting efforts can be just as important as the choice of fixtures.

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Beach Reading

Editorial

By Robert Ivy, FAIA

Lying on the beach, the office fades. But as certain as the waves tumbling in, fall approaches on the heels of summer's ozone-laden days. Before you roll over and toss this issue aside, make a mental note: ARCHITECTURAL RECORD *has plans for you, combining sights, socializing, and intellectual engagement into a cool season of hot activity. Mark these future dates down, if only in the sand.*

September. *The Adriatic remains warm enough–trust us–for a dip on September 12, offering a cleansing balm following the Architecture Biennale, themed "Metamorph" by its director, former Centre Canadien d'Architecture director Kurt Forster. In two days' time, attendees will gain an overview of what architects are thinking globally. This premiere architectural exhibition, which runs from September 12 through November 7, should attract more than 100,000 people to the Giardini, the Venetian public gardens. Stop by to chat, because we'll be there. In partnership with the U.S. Department of State's Bureau of Cultural Affairs and the Peggy Guggenheim Collection,* ARCHITECTURAL RECORD *is responsible for curating the U.S. pavilion.*

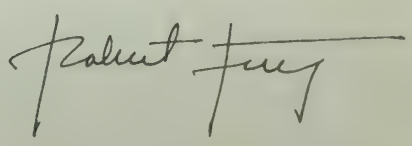
RECORD *editors have assembled an exhibition entitled "Transcending Type"—to be housed in the pavilion's Neoclassical quarters (a mini-Palladian homage designed by Delano and Aldrich in 1930)—in which six talented groups of architects rethink familiar American building categories, including shopping malls, parking garages, and sports arenas. Support for this effort came quickly from the enthusiastic teams themselves (enumerated in a News story in this issue), as well as from corporate sponsors, and, uniquely, from larger firms that are cheering the next generation along. Kudos to them all. You will see and meet them all there.*

October. *Enough tanning; time to pay the bills. On October 26–27, the magazine will host a five-star business-development conference. Held in conjunction with McGraw-Hill Construction's signatory "Outlook" conference in Washington, D.C., which gives industry leaders a preview of upcoming economic trends, this development conference has been tailored for your office's perpetual marketing needs. If you are like most, you always want to learn better ways to find a project, meet a client, nail an interview, and get the job, get the job, get the job. At this conference, a distinguished group of experts will help you fatten up your bank accounts for winter.*

November. *The pace quickens. As a follow-up to last year's highly popular Innovation conference, we are convening a new version in New York on November 15–16. In 2003, we invited a spicy potpourri of Nobel Prize laureates, shipbuilders, material scientists, and architects to discuss advances in making and assembling projects. In 2004, we will address the subject of "Innovation in Tall Buildings" more directly. Certainly, we can hear your caveats: I don't make high-rises; I don't have those budgets, so why should they concern me? But tall buildings serve as vertical laboratories for architectural ideas, permitting urban density and energy efficiency all in one place, provoking creative design solutions, from walls to systems. The results of these concentrated design and engineering efforts spill over to buildings at a range of scales, including those you probably do make.*

On November 16, join three superb teams and decide for yourself. Renzo Piano Studio, together with Fox & Fowle, will present their work on the forthcoming New York Times headquarters building; SOM, on the highly publicized "Freedom Tower" in Lower Manhattan. Finally, Chicago architect Helmut Jahn introduces his engineering partners, including facade engineer Matthias Shuler and structural engineer Werner Sobek, who will describe their shared work on the award-winning Deutsche Post headquarters, in Cologne.

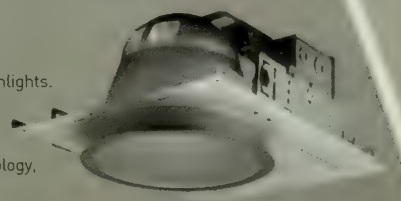
From Europe to your own backyard, fall promises to stimulate and provoke us. Slathered in suntan oil, you may resent being reminded of the real world. If so, flip over and rest for now. Shorter days arrive soon enough.




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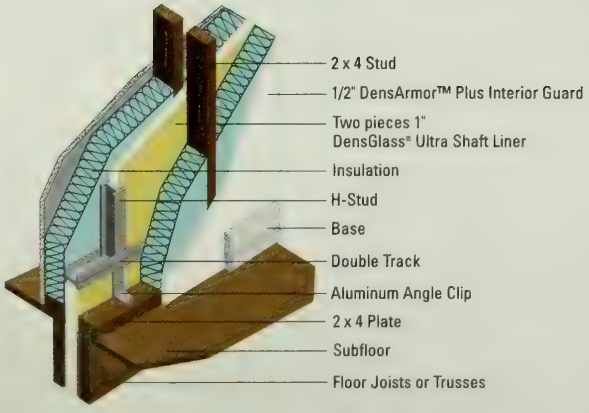
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Letters

Cut the bias

Michael Sorkin's Critique in the June issue [page 117] might more accurately have been titled "Diatribe."

The author comments less on the contemplated Museum of Tolerance than on the policy flaws (as the author perceives them) of the country where the museum is to be located, Israel.

The author implies that Israel lacks moral justification for undertaking such a project, on the basis of its erection of a 30-foot-high security fence along sections of its border. Israel's security fence is intended to prevent infiltration by terrorists and is a measure of last resort. The fence can (and one day, hopefully, will) be removed.

The author writes, "It is not possible to build this project without an opinion on larger issues—real issues of tolerance—in the region." By that standard, Israel is to be lauded, rather than attacked, for its desire to advance, embrace, and commemorate tolerance. None of the regimes surrounding Israel has expressed even the slightest willingness to tolerate cultures other than their own, much less construct a tribute to tolerance as an ideal.

Architecture needs to be judged in a cultural and even political context. However, when the author is so biased that when he looks at Gehry's building he sees the "deconstruction of Yasser Arafat's headquarters in Ramallah," perhaps the article should have been labeled "Op Ed," or should not have been published at all.

—Paul Millman
Superstructures Engineers + Architects
New York City

Memorial mortification

I am simply flabbergasted by the irrelevance of listing the names of the states and colonies on the pillars of the World War II Memorial [Editorial, June 2004, page 23]. If anything, the war pulled Americans together rather than slotting them into their home states. What do state names have to do with it?

Here are two suggestions as to how to fix this problem: 1) Remove the names of the states and replace them with the names of the countries that fought in the war. This at least would be educational, and even a relevant statement of the global nature of the war; 2) Leave the names of the states and, after each presidential election, paint the individual pillars either red or blue to indicate whether their state's electoral votes went to the Republicans or to the Democrats. It's not really any more relevant, but it would be interesting, lots of fun—and so Washington!

—Peter Harnik
Arlington, Va.

Built work, then accolades

When Richard Meier received the Pritzker Prize in 1984, he commented that he thought he might receive this award some day but not that early in his career. Meier had, by that date, a substantial body of built work, but believed a significant range of successful built projects was necessary for an award of this stature. His understanding of architecture seems to agree with most critics and historians: The structure must be experienced in context to be understood and valued. By contrast, Zaha Hadid is just beginning her built work. According to some reviews, the results are mixed. I've read that the Vitra Fire Station, 1993, was so unusable that it is now a museum; that people interviewed at the Transit Station, Strasbourg, France, were in disbelief that the structure was finished. And these projects are in European countries more accustomed to avant-garde architecture. I like the photographs of her Cincinnati building, but I have no idea if it works well for staff and viewers.

In the May Editorial [page 17], you expressed your distress that the popular press was reviewing Hadid on her gender and as a "well-oiled" spectacle at a Miami pool. You must consider that at this time Hadid has more drawings and potential than built work. Lacking architecture, the popular press falls back to what sells: Sex.

—Robert H. Kahn, AIA
Brunswick, Maine

New building, same mistake

Consider the situation—a respected profession that promotes the enhancement of environmental values creates unfriendly environmental conditions in a neighborhood surrounding a major project. As a Los Angeles County architectural design reviewer for the Walt Disney Concert Hall [News, May 2004, page 44], I'd like to say that this should not have happened, but it did. The design team was fully aware of a similar situation. During construction of the Guggenheim Museum in Bilbao, a portion of the roof surface was found to be "scorched" by the sunlight reflected from the angled titanium cladding-system panel configurations on the roof. The problem was duly corrected.

Based on my Bilbao field-observation notes, my comments called for the Disney design to thoroughly study the reflection of the sun on the cladding system during critical periods of the year, and to verify that all highly polished cladding-system surface configurations be placed strategically to overcome hazardous conditions, including changes in summer temperature and glare and intense reflection on surrounding structures, including moving vehicles or aircraft. At that time, I was assured by the design team that all necessary actions would be taken.

I was not aware of the complaints until very recently, when I noticed the "screen" over the troubled cladding area. At a recent dinner, I casually asked Jack Burnell of Disney what had happened to the sun angle calculations. Always with a sense of humor, Jack's response was, "They forgot the Founder's room."

I believe architects take this "happening" as a serious lesson. When architects are insensitive to the environmental concerns, creating strong architectural design statements inappropriately conceived and not friendly to the environment, undesired conditions occur. In this case, there is no exception. A thorough study of the impacted mistakes must be exposed, analyzed, and appropriately corrected.

—R. MyoMyint Sein, AIA
Retired architectural design reviewer of Walt Disney Concert Hall, Los Angeles County Department of Public Works

Corrections

In the June issue, on page 198, Elliott Kaufman should have been credited for the photo of Perry Lakes Park, Perry County, Ala., Rural Studio. Also in June [page 151], VCBO should have been listed as architect of record along with Moshe Safdie as design architect for the Salt Lake City Public Library. In the May issue, on page 148, credits for the Washington Convention Center should have noted the project was a joint venture of TVS-D&P-Mariani PLLC. In News [July, page 21], the photo listed as AIA College of Fellows honorees is actually of the former presidents of the AIA waiting for the College of Fellows ceremony to commence.

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RECORD curating American Pavilion exhibition at Venice Architecture Biennale p. 32

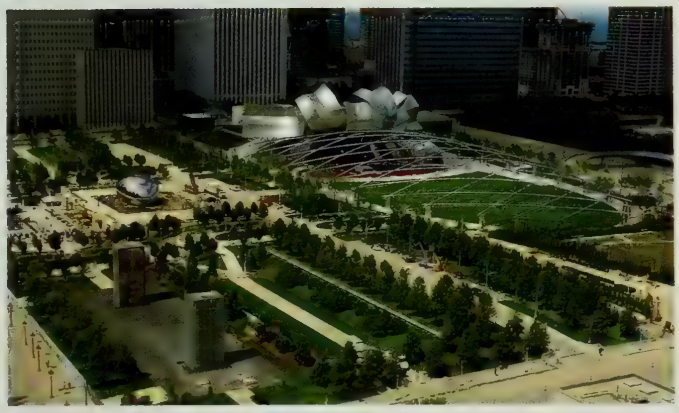
Sunday in the park with architecture

Chicago's Millennium Park [May 2004, page 61] opened in mid-July, stunning the large local crowds and drawing worldwide attention to a city already known for its architecture.

Highlights of the 24-acre, $450 million cultural and recreational space include a twisting, stainless-steel band shell by Frank Gehry, FAIA (who also designed a snaking pedestrian bridge); a highly reflective, teardrop-shaped sculpture by Anish Kapoor; an interactive sculptural fountain/video installation by Jaume Plensa; and a contemporary garden by Kathryn Gustafson. Other elements include a public theater, bicycle station, restaurant, promenade, and ice rink.

Located between Lake Michigan and Michigan Avenue, the site used to be an eyesore: a rail yard and parking lot extending from Grant Park. It now serves not only as a respite for locals, but as a tourist magnet and landmark for the city. Thousands attended its opening weekend celebration, beginning July 16.

The project was funded by the city, corporations, and local donors, who saw the price tag balloon to three times original estimates, with completion delayed by four years. Skidmore, Owings & Merrill's original Beaux-Arts scheme was mostly scrapped. And while Mayor Richard M. Daley has made the park a centerpiece of his vision to improve the city's built environment, some neighbors have complained that the park's cost has deprived other local projects of necessary funding. *Sam Lubell*



Gehry's Jay Pritzker Pavilion dominates a surreal architectural landscape.



The bowl maintains its shape and location, but little else.

Hollywood Bowl is fine-tuned and reimagined

June 25 marked the opening night and unveiling of the transformed amphitheater shell and stage at Los Angeles's Hollywood Bowl, a beloved landmark.

L.A.-based Hodgetts + Fung Design and Architecture's reconception of the structure maintains its trademark arch while incorporating a more contemporary aesthetic and adding important acoustic features.

The shape of the interior, which has always been an acoustic challenge, has been altered and lined with thin baffles, while a floating elliptical ring reflects sound waves to all parts of the stage. Programmable louvers adapt the canopy to various types of music performances, allowing for stage size to be increased by 30 percent. Flanking the arch are stepped wings that shield a new backstage area.

Funding for the $25 million upgrades to the structure, originally built in 1929, was approved by voters in 1996. One of the largest natural amphitheaters in the world, with seating just under 18,000, the Hollywood Bowl has long been the summer home of the Los Angeles Philharmonic, and its design has evolved through the years with the contributions of architectural luminaries like Myron Hunt, and more recently, Frank Gehry. *Allison Milionis*

Modern condominium complex will go up next to Schindler House in Los Angeles

Prompting some raised eyebrows, a new condominium complex next to R.M. Schindler's famed studio-residence in West Hollywood received planning approval on June 25.

The 82-year-old Schindler House is widely recognized as an early Modernist landmark. For more than a year, officials at the MAK Center for Art + Architecture, which occupies the house, have fought the development, fearing it would diminish the building's historic presence. The center even held a design competition last year that reenvisioned the neighboring plot.

Developer Richard Loring and architect Lorcan O'Herlihy, AIA, insist that their project has been mindful of its well-known neighbor. The 33,912 square-foot complex, called "Habitat 825," houses 19 units in a wood, concrete, and glass structure. The building varies in height from one to two stories to create a low north profile that avoids casting shadows onto the Schindler building. "Our goal is to draw inspiration from Schindler in developing new forms of contemporary lifestyle," says O'Herlihy.

Still, Kimberli Meyer, MAK Center director, expresses concern with the new site's shading impact and with what she sees as incomplete visual buffering. Construction on Habitat 825 will begin in September, with completion anticipated by early 2006. *Tony Illia*



Habitat 825's unorthodox design.

REBUILDING LOWER MANHATTAN

OFF THE RECORD

Mark Wigley has been named the dean of the Graduate School of Architecture, Planning and Preservation at Columbia University.

The founding partners of Hardy Holzman Pfeiffer Associates (HHPA), Hugh Hardy, FAIA, Malcolm Holzman, FAIA, and Norman Pfeiffer, FAIA, are disbanding effective August 1.

Washington, D.C., city officials voted to authorize $40 million in tax increments to help finance a Frank Gehry–designed renovation and expansion of the Corcoran Gallery of Art.

Time magazine has reported that Richard Meier, FAIA, is designing a new Hard Rock hotel-casino tower in Las Vegas.

The National Trust for Historic Preservation recently announced its 2004 list of America's 11 Most Endangered Historic Places. For the list, visit www.nationaltrust.org/11Most/.

Architect Jack Pringle, a partner in the London firm Pringle Brandon, has been elected the next president of the Royal Institute of British Architects (RIBA).

Edward Killingsworth, one of the last Case Study House architects, died of on July 6 at the age of 86.

Sasaki Associates has named Dennis Pieprz its new president.

Sir Nicholas Grimshaw has announced a succession plan that will lessen his role in the operational side of the business at Grimshaw Architects.

Robert Davidson has left his position as lead architect of the Port Authority of New York and New Jersey to join Manhattan architecture firm STV.

Amid uncertainty, Freedom Tower gets a cornerstone



The Freedom Tower cornerstone, a 20-ton granite rock, placed at the site.

In a ceremony on July 4, New York leaders laid the cornerstone for the 1,776-foot-tall World Trade Center Freedom Tower.

The stone, a 20-ton granite block, is inscribed with the words "To honor those who lost their lives on September 11, 2001, and as a tribute to the enduring spirit of freedom." It was placed in the northwest corner of the site, at bedrock, 70 feet below street level.

The tower itself, designed by Skidmore, Owings & Merrill, will be (if built) one of the world's tallest buildings, with over 72 floors, 2.6 million square feet of office space, and a massive latticework structure.

But it is not a sure thing. Because of developer Larry Silverstein's recent court loss over insurance settlements, funding for the building remains in doubt, as does the demand for downtown office space. Meanwhile, as many continue to argue over the designs and feasibility of projects at Ground Zero, and as lawsuits between architects and developers (see below) begin to emerge, most agree that progress has come particularly quickly (some say too quickly) for a project of such magnitude. *S.L.*

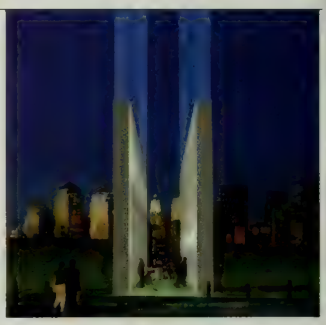
New Jersey memorials evoke strong memories

New York–based architect Frederic Schwartz was selected last month to design the New Jersey 9/11 memorial in Jersey City. The design, which is called "Empty Sky," frames a view of the former Twin Towers from the Hudson River's banks in Jersey City.

Schwartz was the founding member of THINK, a group selected as a finalist for the Ground Zero master plan. He also won the commission to design Westchester County, New York's memorial, and was a finalist to design a Hoboken, New Jersey, memorial.

The New Jersey memorial will be composed of two 30-foot-high, 200-foot-long steel walls, flanking a 16-foot-wide bluestone path. The walls will be inscribed with the names of New Jersey's nearly 700 victims and will be surrounded by a landscaped berm that forms a natural amphitheater facing Manhattan.

Just upriver, the Hoboken, New Jersey, 9/11 memorial commission was awarded to FLOW, which includes Jeanne Gang of Studio/Gang/Architects as well as artists, engineers, and lighting designers. The memorial, which the designers call "Hoboken Island,"



Schwartz's New Jersey memorial.

includes a "Narrative Wall" of first-person accounts of the day that will lead to a small artificial island in the Hudson River. An illuminated glass "Tidal Well" in the center will list Hoboken's 57 victims. *Kevin Lerner*

Wasn't it inevitable? Libeskind sues Silverstein

On July 13, months of frustration over the development of Lower Manhattan seemed to boil over as World Trade Center master planner Daniel Libeskind sued developer Larry Silverstein for money he claims is owed him for his architectural services at Ground Zero. Libeskind's lawyer, Edward Hayes, says that Silverstein had originally promised to pay his client but has since reneged because of differences over the World Trade Center master plan, which he says Silverstein considers an economic impediment to his developments. The lawsuit was filed in New York Supreme Court in Manhattan. Libeskind is suing for $843,750, an amount based, says Hayes, on a percentage of the Freedom Tower's total cost, a procedure rooted in industry practice. Hayes says Silverstein has offered to pay only $200,000, but adds that no contract had been signed between Silverstein and Libeskind. "We made a mistake," he says. "We should have worked out a deal beforehand." In a written statement, Harold J. Rubenstein, Silverstein's spokesman, responded, "Daniel Libeskind has already been paid many millions of dollars for his work by the LMDC and the Port Authority and is unable to provide any industry standard time sheets or other documentation that would justify an additional payment of more than $800,000." *S.L.*



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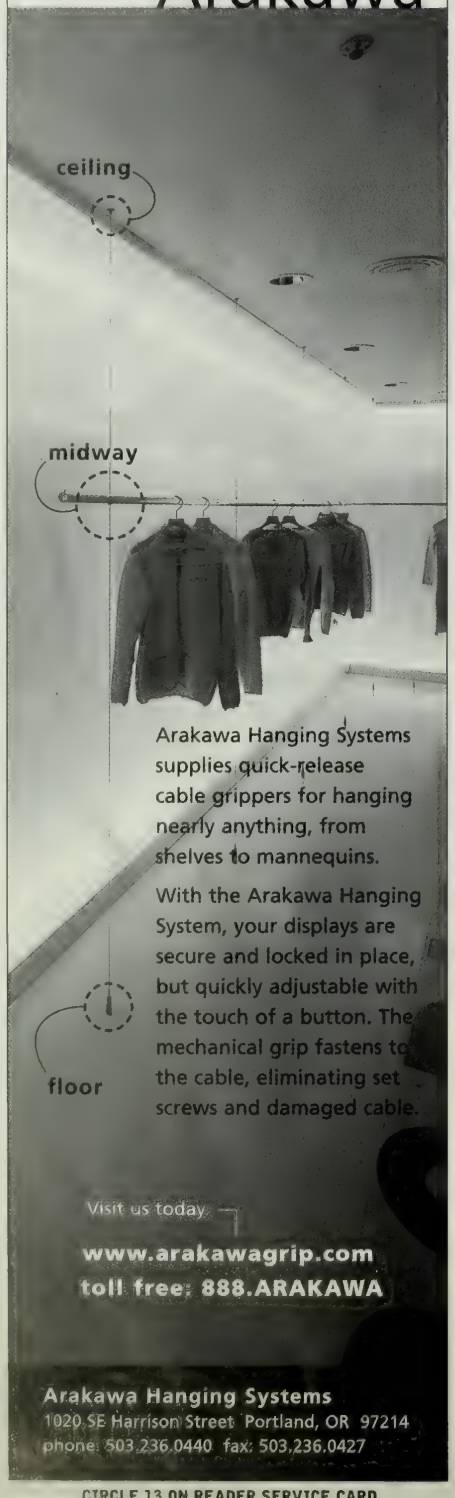
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The Olympic Green Convention Center straddles many key sites.

RMJM to design key Beijing olympic venue

Chinese developer Beijing North Star has awarded U.K.-based RMJM the commission to design the Beijing Olympic Green Convention Center, one of the 2008 Olympic Games' key venues.

RMJM beat out competitors that included OMA, Philip Cox Architects, and KMD with a design that straddles several different sites of the games and includes elevated piazzas and pedestrian bridges. The convex design of the rectilinear building's front elevation allows for a road to flow underneath the convention center.

The biggest challenge of the project, says Gordon Affleck, an associate director for RMJM based in Hong Kong, is that the convention center is supposed to include historic themes from the Qin Dynasty because it sits midway on the games' main boulevard. The boulevard, master planned by Sasaki Associates and Tianjin Huahui Architecture and Design Company, is a symbolic time line of Chinese history from 3000 B.C. to the present day.

Since the Qin Dynasty, when a common Chinese language was established and seven kingdoms were brought under one rule, was a period of unification in the 2nd-century B.C., RMJM came up with "a building that unifies everything with a busy public edge," says Affleck.

The convention center, just under 3 million square feet, will be located near many other key sites, including the main sports stadium, the swimming complex, and the Olympic Park. The convention center will house the main press center for the games and also host indoor Olympic events like fencing and pistol shooting. RMJM's commission also includes the master planning of a nearby 30-acre site for hotel, commercial, and retail space.

But while the convention center has been created for the Beijing 2008 Olympics, Affleck says that much consideration went into making the space a multifunctionary venue that will have a lifetime that stretches well beyond the four weeks that the Olympics will last. "We see the Olympics as the first tenant of the exhibition center," he says. The design also includes environmentally-friendly features like natural ventilation and solar panels for heating. *Jen Lin-Liu*

Probe says steel tubes, not columns, are likely trigger for Paris airport's concourse collapse

External tubular steel struts puncturing the shell-like concrete roof of Paris Charles de Gaulle Airport's newest concourse likely triggered the May 23 collapse [RECORD, July 2004, page 163], say preliminary findings of a French government probe released last week. But investigators have yet to explain why the structure's behavior changed suddenly on a Sunday morning, 30 months after its construction. The collapse killed four people.

The lower number of struts in play reduced the bending strength of part of the 2,133-foot-long shell, causing it to break in flexure, suspect investigators. However, a conclusive explanation is unlikely before the end of this year, says Jean-Armand Calgaro, one of four experts on the government commission. The commission, appointed two days after the collapse and led by senior civil engineer Jean Berthier, was not asked to assign blame. Berthier's team has ruled out a shearing failure of columns supporting the flat tube-shaped roof as the cause of the disaster. Subject to further surveys, the commission also eliminated foundation pile settlement and the legacy of known column construction problems as likely causes. ***Peter Reina***



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Madrid's cultural axis seeing splendid improvements

The first of a series of improvements to the cultural facilities around Madrid's Prado Museum were unveiled this June with the inauguration of an addition to the Thyssen-Bornemisza Museum and the partial opening of Jean Nouvel's addition to the Reina Sofía Museum of Contemporary Art. Other work under way includes Rafael Moneo's addition to the Prado, which will open sometime next year; Herzog & de Meuron's Caixa Forum Madrid, a center for contemporary art run by the Caixa Foundation; and a restructuring of the surrounding streets into a pedestrian-friendly "Cultural Axis" by a team led by Alvaro Siza.

The 86,000-square-foot annex to the Thyssen occupies two buildings adjacent to the 18th-century palace rehabilitated by Moneo in 1992, and accommodates additions to the original collection. The project, by Barcelona architects Manuel Baquero, Robert Brufau, and BOPBAA (Josep Bohigas, Francesc Pla, and Iñaki Baquero), involved partially gutting an early-20th-century palace and apartment located behind the museum's entry garden and inserting new galleries matching the proportions and finishes of Moneo's spaces.

Nouvel's addition to the Reina Sofía features three pavilions grouped around a patio, dramatically shaded by a soaring cherry-colored metal canopy. It increases the museum's space by 60 percent, and includes a patio-level café and a library, composed of a series of sculptural glass-walled terraces overlooking the street.



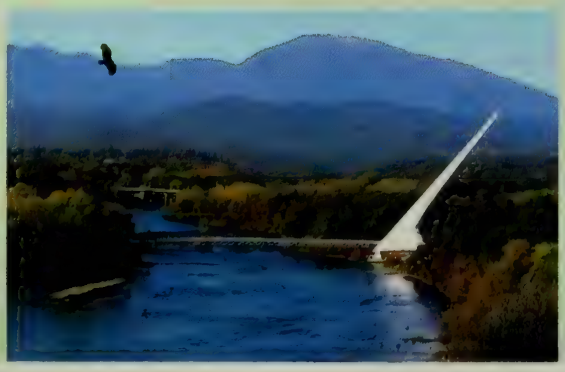


The Thyssen-Bornemisza Museum project (above and left) joins work by Nouvel and Moneo in the district.

Moneo's discreet brick and stone structure behind the Prado, meanwhile, incorporates a 16th-century cloister, a surviving fragment of a monastery once occupying the site. The new spaces supply visitor and technical services lacking in the original 1785 Neoclassical building, including temporary exhibition galleries, a restaurant, auditorium, library, and restoration studio. *David Cohn*

Destination architecture reaches out

Santiago Calatrava's $23.5 million "Sundial Bridge" opened in Redding, California, on July 4 weekend. The gleaming white, cable-stayed pedestrian bridge, paved with translucent glass and veined granite, spans 700 feet across the Sacramento River. It has a single, 217-foot-tall pylon that leans back at a 42-degree angle, creating an upward sweep that supports the bridge deck. The eye-catching structure is drawing record numbers to this normally sleepy town (population 84,000). "It's having a huge effect," says tourism director Angela Byrd. "From what I've seen, there haven't been fewer than 100 people on that bridge since the day we opened it." *S.L. and T.I.*



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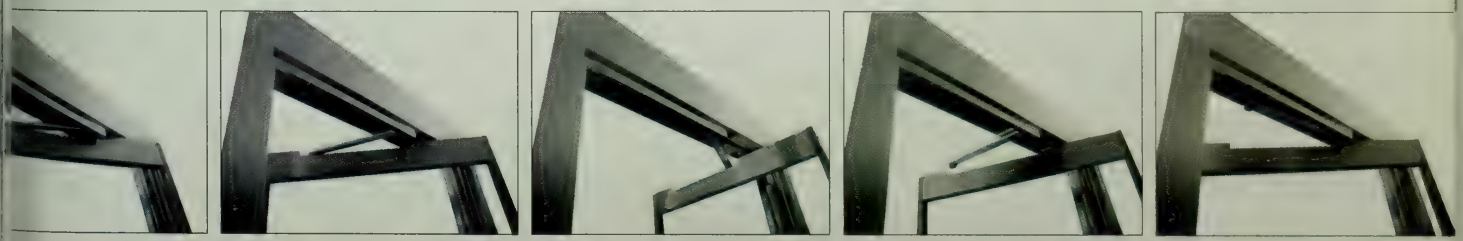
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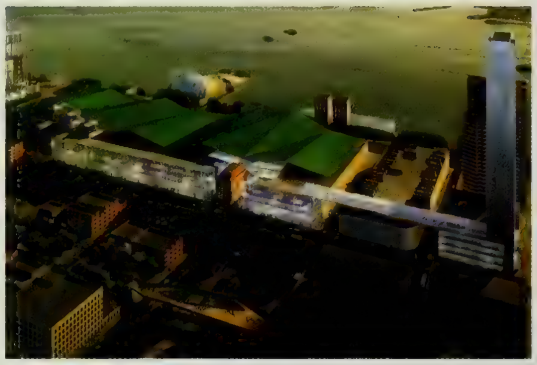


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The Javits's green roof, designed by HOK, has folds reminiscent of the Hudson River's land shelf.

New York's Javits Center design shows off world's largest green roof

In late June, New York's Jacob K. Javits Convention Center unveiled plans for a greatly expanded space, designed by Saint Louis–based HOK.

The new structure, expanding north and west from the current space by I.M. Pei, will almost double its size. Currently, Javits is one of the smallest of any major U.S. convention space, at 760,000 square feet. The new center will boast revamped interiors and exteriors and will measure 1.34 million square feet.

A notable feature of the new design is a 22-acre green roof, which will be the largest in the world, the firm says. Covered with seedum, the roof will be made up of folded planes, inspired by the geography of the Hudson River Valley, while the layout, as described by HOK principal Kenneth Drucker, AIA, is inspired by Central Park's Great Lawn. "Once we realized we would be surrounded by several 50-story buildings (part of the planned Hudson Yards project), we thought we would could really relate to the park."

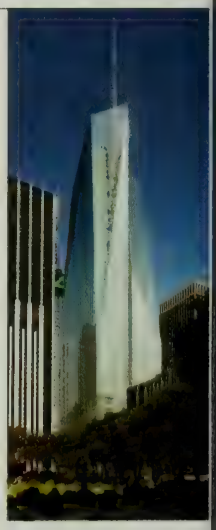
Because of upkeep difficulties, only about 5 acres will be accessible to the public, in the form of hardscape, grassy areas, and an esplanade. Construction on the project is set to begin in 2005. Legislation to authorize spending for the Javits expansion is currently pending in the New York State Assembly. *S.L.*

Big and Green: One of the tallest buildings in Manhattan will also be eco-friendly

In late June, Cook + Fox Architects unveiled designs for Bank of America tower, which will likely be the second-tallest building in New York City, and, the firm says, one of the most environmentally-friendly tall structures in the U.S.

The 2.1-million-square-foot, 945-foot-tall skyscraper, located on Sixth Avenue between 42nd and 43rd Streets, will be made largely of glass, steel, and aluminum. Its form will incorporate large angular folds and vertical lines, helping provide varied views of the surrounding cityscape from inside and change viewers' perception as they walk around the building. The design, firm members point out, is also meant to reduce wind drag against the tower, particularly its upper portions.

The project's green features build on those of the Condé Nast Building, 4 Times Square, next door. Firm principal Robert Fox, AIA, worked on the building with Fox & Fowle. Daylight at Bank of America is increased with taller ceilings (up to a foot taller than most office buildings, which explains why the mammoth tower will only have 54 stories) and floor-to-ceiling windows, while an on-site cogeneration plant will provide much of the building's energy. Other green elements include LED lights, recyclable building materials, waterless urinals, a gray-water system to capture wastewater and rainwater, and under-floor displacement air ventilation that allows for air filtering and individual heat and air control. An urban garden room will greet visitors on the lower levels. The building will also incorporate the restored and reconstructed 1,000-seat Henry Miller Theater.



The crystalline Bank of America tower will dominate Bryant Park.

"We knew we had to keep pushing the limits of green architecture," says Fox. The building will house Bank of America's offices on its lower half, and a number of future tenants on its upper floors. It is scheduled to break ground in August and open in 2008. *S.L.*

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ARCHITECTURAL RECORD curating Venice Architecture Biennale's American Pavilion

The U.S. State Department has chosen ARCHITECTURAL RECORD to curate the U.S. Pavilion exhibition at the Venice Architecture Biennale this September.

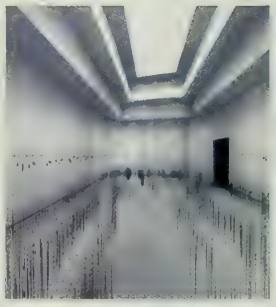
Entitled *Transcending Type*, the exhibition, developed by RECORD editors, will feature six vanguard U.S. firms exploring new forms and uses for iconic modern building types, and providing a fresh perspective on structures that have been replicated globally. Drawings, digital media, and three-dimensional installations will present new visions for the shopping center, apartment tower, sports arena, parking garage, spiritual space, and highway interchange.

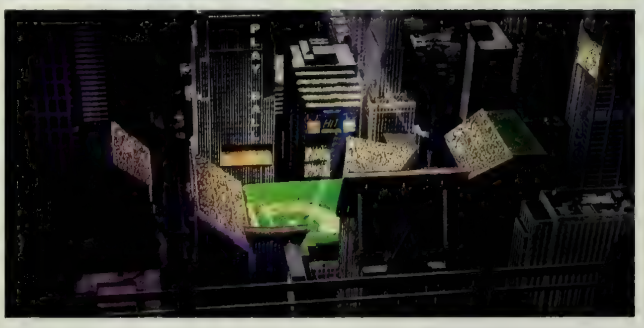
"This exhibition lifts architecture out of the familiar, giving these building types a new energy and sense of possibility," says Robert Ivy, FAIA, RECORD editor in chief and exhibition commissioner.

The show will be on view at the U.S. Pavilion in the Giardini di Castello from September 12 to November 7, 2004, and is part of the 9th International Architecture Exhibition of the Venice Biennale—whose theme, "Metamorph," signals critical transformations in architecture over the past 50 years. *S.L.*

Firms and projects represented:

- **George Yu Architects, Los Angeles:** Shopping Center
- **Kolatan/MacDonald Studio, New York:** Residential High-rise
- **Studio/Gang/Architects, Chicago:** Sports Arena
- **Lewis.Tsurumaki.Lewis, New York:** Parking Garage
- **Predock_Frane, Los Angeles:** Spiritual Space
- **Reiser + Umemoto, New York:** Highway Interchange





Exhibition entries by (clockwise, from top left) Predock_Frane; George Yu Architects; Kolatan/MacDonald Studio; Reiser + Umemoto; Lewis.Tsurumaki.Lewis; and Studio/Gang/Architects.

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Record News

First of the "Houses at Sagaponac" completed



The Hariris' house is one of several Modern dwellings by big-name architects in the new development.

In one of the country's most fashionable vacation spots, the Hamptons, on New York's Long Island, developer Harry Coco Brown has completed the first home of his development, Houses at Sagaponac, and placed it on the market. The building is one of 34 modern, architecturally distinctive vacation homes designed by well-known architects.

The home's architects, sisters Gisue and Mojgan Hariri, designed the four-bedroom, wood-framed structure in a Modernist style. A cantilevered ramp leads to two elevated rectangular volumes with grayish cedar siding that form an L-shape around a large swimming pool. A wooded lot provides privacy to a sleek house that otherwise exhibits openness. Substantial exterior sections, meanwhile, are made of floor-to-ceiling windows.

Three other houses under construction are due to be finished by the end of the year. A Buddhist-style structure, designed by Henry Cobb, FAIA, has separate pavilions inside a courtyard linked by a columned passageway with 108 louvered doors made of teak. Another, by Shigeru Ban, will be surrounded by a small forest of 12-foot-high bamboo, and is distinguished by structural supports that are made from cabinets, bookcases, and other furniture.

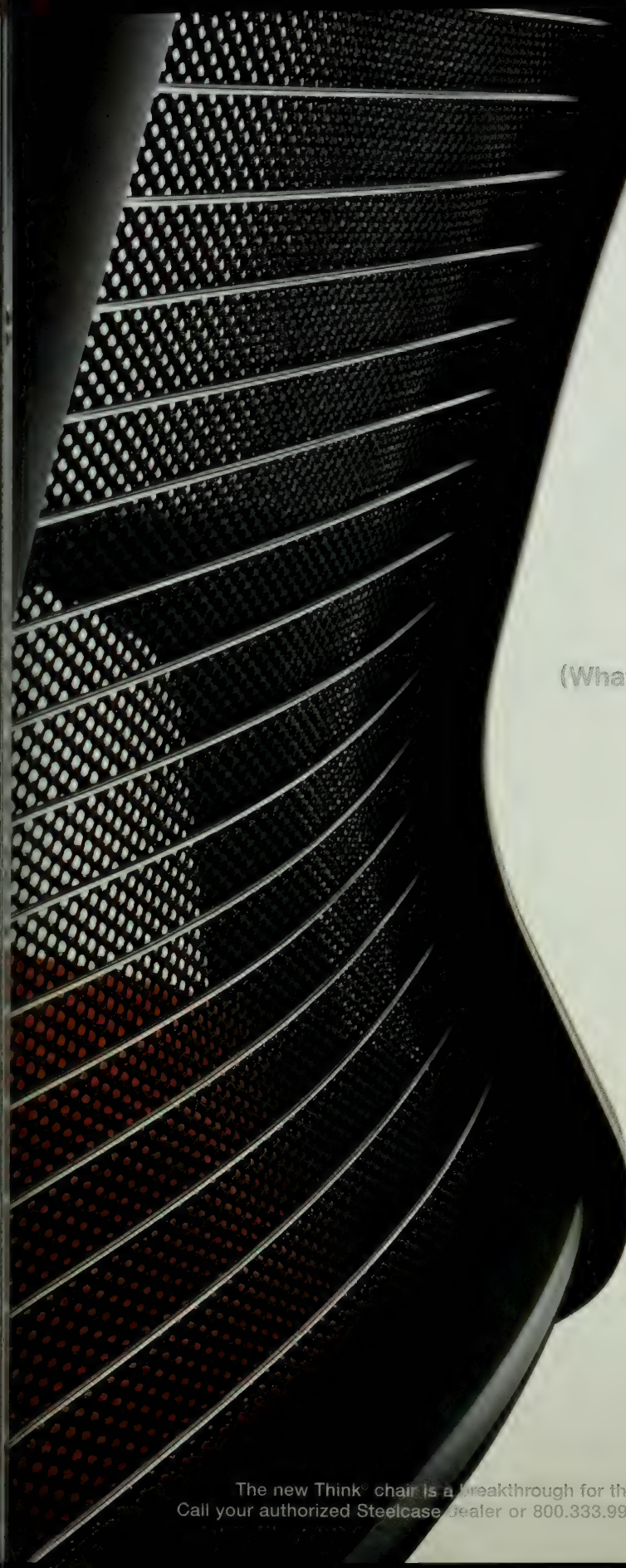
A former head of development for 20th Century Fox, Brown arranged the project on a roughly 120-acre failed subdivision that he bought a decade ago. The area is today one of the largest unbuilt parcels of land in the Hamptons. Like an art film producer, Brown saved money by getting star architects to give him cut-rate prices on their designs. He even used product placement: Brown says Viking, Lutron Lighting, and Sony gave him bargains on their products for the opportunity to be involved.

The unique development, Brown comments, is a reaction against the new, elaborate "McMansions" with manicured lawns that are fast gobbling up the area's remaining open space. In contrast, Brown's houses are set in a densely wooded, trail-laden area, are moderately scaled, and eschew ornamentation. "We can have community without having conformity—it won't be ersatz old-fashioned," says Brown. *Alex Ulam*

First London Architecture Biennale draws thousands

More than 25,000 people attended the inaugural London Architecture Biennale that was staged June 19–28. The brainchild of former *RIBA Journal* editor Peter Murray, the event featured more than 70 talks, parties, seminars, film screenings, exhibitions, debates, and other events, uniting the public with architects, artists, designers, politicians, and celebrities to explore the past, present, and evolving future of Clerkenwell, an area of the city chosen as the biennale's first location, due to its identity as a creative hub.

One of the many highlights was the *Urban Interventions* exhibition, profiling the work of more than 50 leading, locally based architects, including Zaha Hadid, CZWG, Wilkinson Eyre, AHMM, and McDowell and Benedetti. Meanwhile, a record-breaking 1,162 attended an evening lecture at the Barbican Centre by Hadid. Among other events was a debate about Prince Charles's role in recent architecture, and another on the role of the creative industries in urban regeneration. A new guide to the area, Clerkitecture, featuring its historic gems and recent redevelopments, was published during the biennale. The event's runaway success means it will be extended to other areas of London in successive years. "The biennale really touched a chord. The huge response and positive feedback means that the LAB is now a permanent fixture in the capital's calendar," said Murray. *Lucy Bullivant*



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Trinity Church takes a dominant seat in Boston.

Richardson's Trinity Church in next phase of renovation

This summer, the restoration of H.H. Richardson's Trinity Church in Boston shifted to the landmark building's murals and stained glass. Conservation experts will spend the next year stabilizing, cleaning, and restoring roughly 9,500 square feet of murals and decorative painting by John La Farge.

Work on Trinity's stained glass, designed by La Farge and others, will take roughly two years. This spring, workers finished patching and weatherproofing the exterior of the 127-year-old church's brownstone central tower.

The La Farge designs, last retouched in the 1950s, line the tower's interior. Water damage and peeling is mostly confined to the decorative painting. The stained glass includes La Farge's multilayered designs, some of which require disassembly and cleaning.

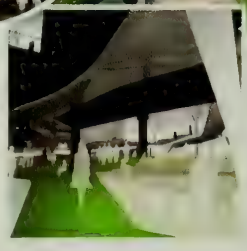
The Trinity parish has also added a basement meeting room, upgraded the electrical system, and drilled six 1,500-foot geothermal wells. The Trinity project, for which the parish aims to raise $53 million, is headed by Goody Clancy and Associates. *Ted Smalley Bowen*

High Line finalists unveil imaginative designs









Designs by (clockwise, from top) Field Operations and Diller Scofidio + Renfro; Steven Holl; Zaha Hadid, SOM, and others; and TerraGRAM.

On July 15, New York's Friends of the High Line (FHL) unveiled designs by four teams competing to redesign Manhattan's High Line, a dormant rail trestle spanning some 1.5 miles along the city's west side. The winning team will be selected this August and, by early 2005, FHL and the city hope to have a master plan that will allow construction to begin in 2006. **Field Operations and Diller Scofidio + Renfro, with Olafur Eliasson, Piet Oudolf, and Buro Happold's** "Agri-tecture" is a flowing mixture of organic and man-made environments, soft and hard surfaces (including a bridge, mound, pit, and "flyover"), with diverse grasslands punctuated by open and enclosed gathering spaces. **Zaha Hadid Architects, with Balmori Associates, Skidmore, Owings & Merrill, and studio MDA** has created a sleek and futuristic vision for the High Line, a techno-friendly environment that seeks to establish a "connection between landscape, topography, and architecture." Open and enclosed walkways will traverse parks and public spaces, anchored by a marketplace at the southern end of the structure. **TerraGRAM: Michael Van Valkenburgh Associates, with D.I.R.T. Studio and Beyer Blinder Belle** visualizes a "park meander," a diverse array of green environments laid down in the midst of extreme urbanity: miniature forests, an urban canyon, and azalea thickets. The team based its ideas on "appreciation for this industrial landscape and accepting it for what it is—degraded and in some cases toxic"—though possessing inherent beauty and a New York–style resilience. **Steven Holl Architects, with Hargreaves Associates and HNTB** plans a "suspended valley" with greenways and pathways anchored on one end by an observation tower and 500-person event space, and on the other by a water-taxi pier on the Hudson River. *Ilan Kayatsky*



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The Smart Money Is On Smart Growth
Robert Puentes, senior research manager of the Brookings Institution Center on Urban and Metropolitan Policy

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Downtown Revitalization and Historic Preservation
Rodney L. Swink, FASLA, director of the Office of Urban Development in the North Carolina Division of Community Assistance

August 24
Vincent James
principal of VJAA, Minneapolis, MN, featured in the exhibition *Liquid Stone*

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Samuel Mockbee and the Rural Studio: Community Architecture
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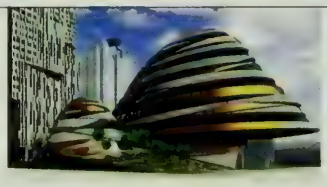


New day dawns for Philip Johnson's New York Pavilion

Philip Johnson, FAIA's New York State Pavilion, a now-derelict amphitheater and gallery complex that opened as a whimsical attraction for the 1964–65 World's Fair, is poised to undergo a substantial alteration. Queens Theatre in the Park, a community playhouse that has occupied the pavilion's cylindrical Theaterama building since 1991, will break ground this fall on a $5.2 million addition designed by Caples Jefferson Architects and Lee/Timchula Architects. The project (left) will include a cabaret space, offices, and a 3,000-square-foot, spiral-shaped lobby, nestled between the Theaterama and three saucerlike observation towers (seen in the 1997 film *Men In Black*). The lobby, at the entry of the Tent of Tomorrow, an outdoor arena that is the pavilion's most significant space, will be clad in glass, and its roof punctuated by skylights to soften its visual impact and maintain views.

Meanwhile, New York City's Department of Parks & Recreation has issued a "request for expressions of interest" to rehabilitate the pavilion itself. Another interested group is CREATE Architecture Planning & Design, which is forming a nonprofit organization dedicated to stabilizing the Tent of Tomorrow and converting it into an aerospace museum. CREATE has teamed with several companies, including Johnson's firm Philip Johnson Alan Ritchie Architects. *James Murdock*

Van Egeraat's "city in a city" for Moscow



Dutch architect Erick van Egeraat has designed a bold new addition to Moscow's urban fabric, a 3-million square-foot, mixed-use conference, shopping, and residential complex called Capital City Moscow. Consisting of two towers to the north, at 61 and 72 stories, respectively, joined by three conical domes of varying sizes in front, the redevelopment's major volumes rely on a series of interconnected routes on different levels to navigate the landscape.

Commercial and leisure spaces occupy the lower stories and domes, commercial spaces make up the intermediate tower floors, and the upper stories accommodate apartments with a broad range of floor plans. This last element is achieved through a nonorthogonal, twisted plan, using cantilevered floors for layout flexibility and to create a more slender silhouette.

"The great variety of apartments creates the idea that tenants occupy a different space from their neighbors," says Van Egeraat. The project is slated for completion in 2005. *Nick Olsen*

Shuttleworth's first new design memorable



Ken Shuttleworth, the creative force behind many of Norman Foster and Partners' projects, who recently left to set up Make, a new London architectural practice that includes 21 of Foster's former staff who left to join the new firm, has announced plans for a vibrantly colored, 984-foot tower in London. The Vortex, as it is known, is hyperboloid in shape, widening at midpoint to create a slender conical form at the top of the structure. Apart from its startling appearance and scale, towering over Foster's SwissRe, two features make the project part of a new trend in London office architecture. First, it is a simple perimeter structure, like SwissRe and Richard Rogers's planned Leadenhall tower. It will also utilize wind-turbine technology and groundwater cooling. The building will include office and residential spaces, effectively creating a mini-city.

Shuttleworth's concept has a 164-foot-diameter roof, making it a prime site for a public green space. The unnamed client hopes to announce the site in the next six months. *Lucy Bullivant*

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News Briefs

New York Times Building gets vital financing GMAC Commercial Mortgage Corporation recently agreed to provide $320 million in construction financing to the developers of the future New York Times headquarters in Times Square. The loan will allow for construction on the 1.6-million-square-foot building to begin this fall, says David Thurm, vice president of real estate development for the Times company. Demolition of the existing buildings on the site will be completed in late July or early August, while soil cleanup will be concluded shortly afterward. *S.L.*



Grand Avenue narrows the field
The Los Angeles Grand Avenue Authority announced the two finalists of the design competition to transform a major downtown street into a focal point of the city. The competition had attracted a roster of international "all-star" designers who have joined forces with local developers to pursue the important $1.2 billion project and an opportunity to redefine Grand Avenue. Passing on several notable teams, the committee narrowed the shortlist to Forest City, a Cleveland-based developer that had declined to name its design team, and Related Industries, with a team comprising David Childs from Skidmore, Owings & Merrill, Howard Elkus of Elkus/Manfredi Architects, and Brenda Levin. *A.M.*

Cooper-Hewitt names awards finalists Rick Joy, Polshek Partnership, Joseph E. Spear, and Rafael Viñoly were named finalists in the Cooper-Hewitt National Design Awards Architecture Design category. Sponsored by the Smithsonian's Cooper-Hewitt National Design Museum, the awards celebrate contributions to the field in various disciplines, including architecture, communications, environment, fashion, and product design. Winners will be announced in October. *N.O.*

Shanghai planners explore efforts to preserve alley houses City planners in Shanghai are introducing a plan to preserve the city's remaining historic buildings, called *longtangs*, or residential alley houses. The plan, which was proposed by local officials of one of Shanghai's wealthiest districts and the city's land bureau, aims to restore the alley houses, rather than demolish them, and to reduce the density of the neighborhoods by more than 50 percent.

One problem remains: Though the plan will give families the option of moving back into the historic buildings, many residents—who survive on incomes of a couple of hundred dollars a month—will not be able to afford to pay the estimated $625 per square meter, about 25 percent of the estimated value of the homes. "About a third of residents don't want to leave, but they also don't have the money to pay even at subsidized rates," admits Wu. *J.L.L.*



One of Shanghai's *longtangs*.

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Dates & Events

New & Upcoming Exhibitions

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Ongoing Exhibitions

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This is a show illustrating Utzon's working method—his process—focusing both on the work and its sources of inspiration. At Louisiana. Call 45/4919-0719 or visit www.louisiana.dk.

SouthwestNET: PHX/LA
Scottsdale, Ariz.
Through September 5, 2004
An exhibition of recent works by six emerging artists from Phoenix and Los Angeles. Although separated geographically, these artists explore similar issues related to the Southwest's unique version of urbanism, from its ubiquitous Postmodern architecture to the impact of suburban sprawl on the desert environment. At the Scottsdale Museum of Contemporary Art (SMoCA). Call 480/994-2787 or visit www.smoca.org for information.

Samuel Mockbee and the Rural Studio: Community Architecture
Washington, D.C.
Through September 6, 2004
Both a practical program for educating future architects and a vital force for improving living conditions in one of the nation's poorest regions, Auburn University's Rural Studio began with the drive and vision of Samuel Mockbee (1944–2001), who was posthumously awarded the 2004 AIA Gold Medal. The exhibition includes both models and photographs of the projects, as well as a number of Mockbee's paintings and sketchbooks from the Rural Studio. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for further information.

Absent Wall: Recalling Gordon Matta-Clark's Garbage Wall (1970)
Montreal
Through September 6, 2004
An installation presented in conjunction with *Out of the Box: Price Rossi Stirling + Matta-Clark*. At the Canadian Centre for Architecture. Call 514/939-7000 or visit www.cca.qc.ca.

Big & Green: Toward Sustainable Architecture in the 21st Century
Chicago
Through September 12, 2004
This national touring exhibition presents 50 projects from around the world portraying architecture that demands less of our natural resources and infrastructure, enhances comfort, and is economical over the life of a building. In the ArchiCenter. Call 312/922-3432 or visit www.architecture.org.

A.R.E. Workstation
Phoenix, Ariz.
Permanent installation
The A.R.E. (Architects Registration Exam) Workstation project by the Associates Committee of the Central Arizona Chapter AIA was inspired by the recent move by NCARB to come up with the A.R.E. Version 3.0. In the AIA AZ Gallery. For further information, call 602/252-4200 or visit www.aia-arizona.org.

Lectures, Conferences, Symposia

Houston Mod: Leo Marmol
Houston
August 19, 2004
Leo Marmol, AIA, managing principal of Marmol Radziner + Associates of Los Angeles, will be the second annual speaker of the Houston Mod

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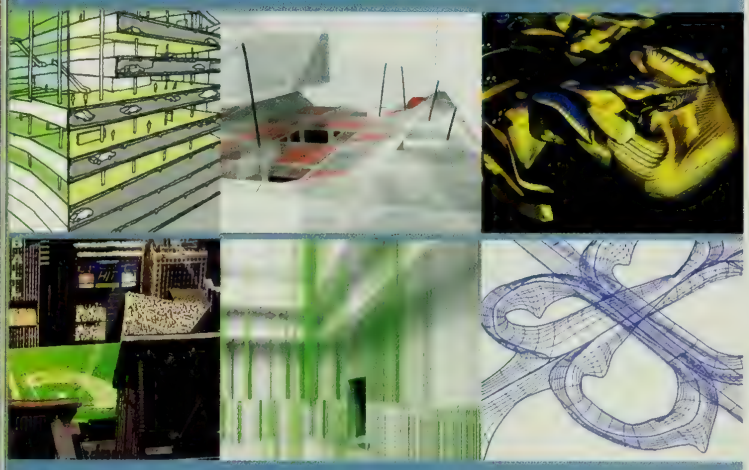
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Dates & Events

August lecture. His firm is responsible for the restoration of Richard Neutra's Kaufmann House in Palm Springs. At the MFAH Brown Auditorium. For information, visit www.marmol-radziner.com or www.houstonmod.org.

Downtown Revitalization and Historic Preservation: Creating More Livable Cities for the 21st Century
Washington, D.C.
August 23, 2004
Rodney L. Swink, FASLA, director of the Office of Urban Development in the North Carolina Division of Community Assistance, will discuss livable downtowns and how they may guide the growth of other urban areas. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

ARMA 2004 Summer Meeting
Kansas City, Mo.
August 24–26, 2004
The Asphalt Roofing Manufacturers Association (ARMA) is the North American trade association representing the manufacturers and suppliers of bituminous-based residential and commercial fiberglass and organic-asphalt-shingle roofing products, roll roofing, built-up roofing systems, and modified bitumen roofing systems. At the Fairmont Hotel. Call 202/207-0917 or visit www.asphaltroofing.org.

Future Office: Design, Development, Community
Charlotte, N.C.
August 26–28, 2004
Conference featuring Frank Duffy (London), Eugene Kohn (New York), Christoph Ingenhoven (Dusseldorf), Ken Yeang (Kuala Lumpur), and many other research, urban design, and development participants focusing on new trends in workplace environments, office buildings, and community design. At the Westin Charlotte Hotel. Call 919/833-6656 or visit www.aianc.org.

Holophane Commercial and Retail Lighting Seminar
Newark, Ohio
August 30, 2004
This seminar will provide an overview of lighting technology with detailed discussions on lighting by application. At the Holophane Light & Vision Center. Call 740/349-4258 or visit www.holophane.com.

Competitions

The 2004 Design Charrette: Urban Legends
Houston
Deadline: August 7, 2004
The RDA Partners of the Rice Design Alliance invite interested parties to participate in a juried competition, Urban Legends, an exercise that will focus on mixed-use urban development. At the Gerald D. Hines College of Architecture. For more information, call 713/348-4876 or visit www.rda.rice.edu.

The International Bauhaus Award
Deadline: October 23, 2004
When cities become transit places, the urban space changes: Flexibility and mobility become key qualities. For further information, visit www.bauhaus-dessau.de or e-mail award@bauhaus-dessau.de.

Architecture for Humanity 3rd International Design Competition
Deadline: October 1, 2004
A competition to design a facility in Somkhele, South Africa, an area with one of the highest HIV/AIDS rates in the world. It will be run by medical professionals from the Africa Center for Health and Population Studies and will serve as a gathering place for youth between ages 9 and 14. For more information, visit www.architectureforhumanity.org.

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For and about the new generation of architects

archrecord2

FOR THE EMERGING ARCHITECT

This month's Design section profiles two architects with different architectural backgrounds who have come to agree on their special brand of design. And in Work, we find out what several students at the University of Texas, along with their professor, have done with their summer vacation. As always, more information can be found regarding these stories in the archrecord2 part of our Web site.



DESIGN

Materialism and architecture



Monika Häfelfinger describes herself as a rational-minded architect. Her partner, Austin Kelly, says he is the opposite of rational. "Our backgrounds are Minimal versus Expressionist," states Kelly. Häfelfinger, born in Switzerland, worked for Herzog & de Meuron; American-born Kelly has worked with Frank Gehry and Eric Owen Moss. After spending time in Europe, though, Kelly's approach to architecture shifted. "Originally, my concept of architecture was all about expressionistic forms of the building and how it related to the city," he explains. "But now Monika and I are like-minded architects in that we look at projects from all points of view." In 2000, this pair created XTEN Architects in Los Angeles.

The first project on which Häfelfinger and Kelly collaborated was a residence in the Los Angeles area. "The owner held a mini-competition for young local architects," says Kelly, "and we won with our design, Polyhouse." Located on the edge of the Venice, California, canals, the house is sheathed mainly in polycarbonate panels and glass to take advantage of the adjoining canal and park. At different times of the day, the changing light gives the panels varying levels of translucency.

The Polyhouse is an example of an overriding theme in XTEN's concept of design. "*Synthetic* is a word we find ourselves using a lot," Kelly points out. "It comes from *synthesis*, from resolving the multiple constraints and requirements of a project through differentiated uses of one specific material and one highly articulated form." So while the Polyhouse's main building material is polycarbonate, another project, the vhouse, utilizes redwood throughout the exterior and interior, and their mhouse's double-height studio's main element is ribbed aluminum. This single massing and material strategy sets XTEN's architecture apart from that of other young firms, which tend to use what Kelly calls a "collage approach."

In 2002, XTEN established an associate office in Switzerland to more easily coordinate projects and competitions the team is involved with in the Basel area. One of these projects is himmelrain, a residential program that includes apartment buildings, courtyards, and walkways. The number of units required by the



mhouse (top), Marina Del Rey, Cal., 2003.
vhouse (middle), Los Angeles, Cal., 2002.
Polyhouse (bottom) Venice, Cal., 2001.

Once they find a material that works for a project, the XTEN architects use the material almost exclusively in as many ways and scales as possible. The firm plans to continue this focus on materials in future projects.

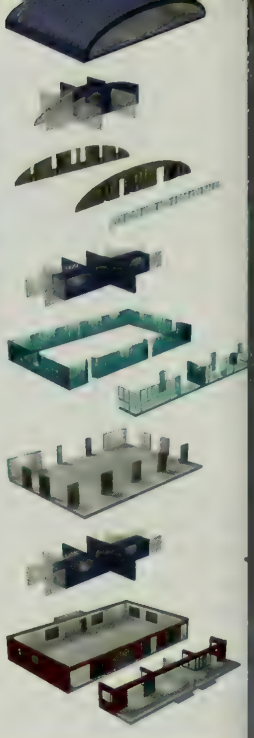


developers could easily have interfered with the scenic surroundings. XTEN was short-listed by these developers when they presented a plan that, instead of tall buildings, consisted of nine separate low-rise structures. Häfelfinger explains how they took into account European ways of living during the planning stage. "It was necessary to integrate handicap accessibility into the design because it's not unusual for many generations to live together in Europe. An elder generation's needs are a factor. And, unlike gated communities commonly found in the States, the grounds are open, and nonresidents can pass through easily. The patio doors of the ground-level apartments open up onto communal space and walkways. There aren't any fences involved."



With himmelrain soon breaking ground and 90 percent of the units already sold, XTEN is looking forward to working on other large-scale projects that will explore experimental work. These ventures include a 60,000-square-foot boutique hotel and the renovation of a 1960s-era bank building, both in the Los Angeles area. Kelly adds, "Like many of our projects, XTEN is very much a work in progress." *Randi Greenberg*

For more projects and photos of XTEN Architects and to find out how to submit your portfolio, go to *archrecord.construction.com/archrecord2/*



himmelrain, Sissach, Switzerland, 2004. These tri-level apartment buildings will be clad in varied materials, including plaster, glass, and zinc. The facades will have the effect of reducing the scale of the buildings to better integrate with the landscape.

WORK

Students build from the ground up





The house (above) has 1,200 square feet, with cisterns, porches, and landscaping that includes gabion walls (shown right, with team members).

Eight graduate students, eight undergraduates, and one faculty member at the University of Texas at Austin have spent this summer under the blazing Texas sun, hard at work building a house. UT's School of Architecture's first design-build studio, called Design › Build › Texas, broke ground on the single-family residence in mid-May. Designed and constructed by the students, the two-bedroom, two-bath, 1,200-square-foot house will demonstrate environmentally sensitive siting and design within an affordable context. The house sits on a 1.5-acre plot on a 1,000-acre ranch in Johnson City, about an hour outside Austin.

Materials include wood and steel framing, precast and poured-in-place concrete, as well as rammed-earth and straw-bale construction. Photovoltaics, solar panels, rainwater collection, and other sustainable technologies will also be used. Once completed, the house will serve as guest quarters for the larger ranch, and will offer educational tours and events.

"This house is a model for an extreme area," says Louise Harpman, associate dean for undergraduate programs at UT, and the initiator of the project. The realization of Design › Build › Texas is a coup for Harpman. An eight-year veteran of Yale's School of Architecture, where she was the studio director for the Yale Building Project, Harpman came to Austin in the fall of 2003 hoping to accomplish what she could not at Yale. With a single donor giving the students land plus $120,000, and around 15 building-product donors stepping up to be involved, the program was a huge success. According to Harpman, it's the first of its kind. "Most university design-build programs build for a local not-for-profit, an agency, or a developer," she says. "For us, the demand of trying to 'sell' the house has been lifted. This is a true academic, experimental project, where the students can put all those things they've learned in class to the practical test."

With completion planned for early September, Harpman is now courting three possible donors for UT's next design-build studio, and she and the students have submitted the program to the U.S. Green Building Council as a replicable education prototype. ***Ingrid Whitehead***

There's more to this story—to find additional information and photos, go to our Web site: *archrecord.construction.com/archrecord2/*

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Redevelopment plans have long failed in Detroit. The newest round are different, but will they work?

Correspondent's File

By Kate Stohr





Developments like Max Fisher Hall (left) and the renovated Renaissance Center (right) are coupled with efforts to transform abandoned green spaces (center).

When it opened in 1977, Detroit's Renaissance Center was intended to herald, as its name implies, the revival of downtown Detroit. Thirty years later, the looming riverfront hotel complex overlooks an urban landscape pockmarked by majestic ruins, vacant lots, and underused infrastructure. Urban prairies grow in neighborhoods once inhabited by assembly-line workers and newly minted car barons (the city owns more than 40,000 vacant lots). Saplings have taken root between the rotting floorboards of arson-stricken buildings, and lonely patches of still-viable structures are surrounded by vacant and abandoned property.

Separated from the rest of Detroit's downtown by concrete berms and Jefferson Avenue, the center's six glass-plated towers struggled to retain tenants despite a round of renovations in the mid-1980s, and did little to stem the exodus from the city. And while the RenCen, as it has come to be called, still dominates the skyline, instead of encouraging investment, the isolated development has become a looming symbol of Detroit's many ill-fated revitalization attempts.

Now, courtesy of its new owner, General Motors, Renaissance Center is getting a much-needed overhaul. And with the Super Bowl coming to Detroit in 2006, the city is dangling incentives to many building owners to repair rundown facades, cracking down on building-code violations, and investing millions of dollars in streetscape improvements. At the same time, projects ranging from loft conversions to adaptive reuse of historic landmarks to the redevelopment of the city's waterfront have introduced a sense of steady progress after years of stop-and-go redevelopment efforts. This has left many to wonder: Is the city at last on the verge of a long-promised renaissance? Will the latest spate of rebuilding rekindle investment in Detroit, or will it be just another round in a seemingly Sisyphean battle to recapture the capital-of-the-car's once-vibrant past?

"There's a lot of buzz and enthusiasm coming up from the community," says AIA president Gene Hopkins, a Michigan native and a principal with the Detroit-based firm SmithGroup. He thinks the city's latest building push will be "contagious," and has made a point of taking AIA leaders on a tour of the city during his term. "You say 'Detroit,' and there's a lot of negative perception that comes up," he says. "A lot of people don't know Detroit. All they've heard is what it was like 20 years ago."

Detroit's rebirth has been proclaimed before. Over the years, the city has cycled through a series of stunted, sporadic, and often money-losing revitalization efforts, from slum clearance in the 1960s to a controversial new auto plant for General Motors in the 1980s. When the People Mover started its loop in downtown Detroit in 1987, the 2.9-mile monorail was to be phase one of a mass-transit project that would reconnect the city and its suburbs, but the planned light-rail connections were never built. Critics called the monorail (which still runs) an "elevator to nowhere."

The new millennium ushered in more sky-grabbing, big-ticket development: new stadiums for the Detroit Tigers and the Detroit Lions and an ongoing battle to build three casinos. Through it all, the city's vacancy rate continued to climb, and the city spent nearly as much demolishing buildings and maintaining abandoned parcels of land as it did on new investments.

Development, change, and rehabilitation

Still, the latest wave of building projects has instilled hope in even hardened skeptics. When General Motors acquired the 5.5-million-square-foot Renaissance Center for $75 million in 1996 and announced plans to invest another $500 million renovating the hotel and office complex, the decision represented more than just a financial commitment to the city. The automaker's decision to turn one of Detroit's

Kate Stohr is a freelance journalist and a cofounder of Architecture For Humanity.



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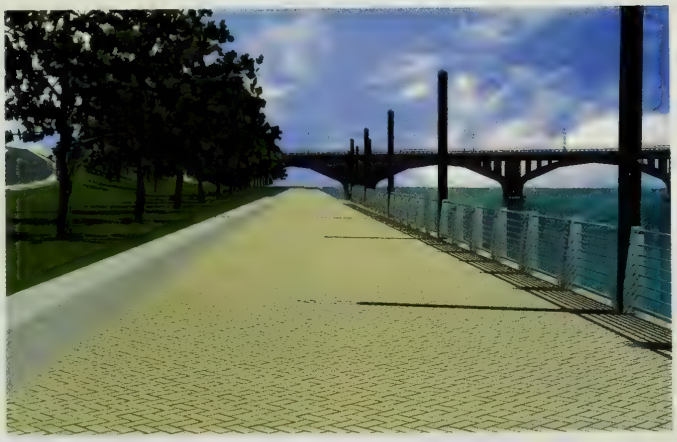
most maligned icons into its global headquarters seemed emblematic of a citywide shift to revitalize and link together existing structures rather than begin anew, as developers had done in the past.

Seven years later, the project, headed by the Chicago office of Skidmore, Owings & Merrill (SOM), is 90 percent complete. The complex's vine-covered berms have been replaced by a stainless-steel and glass facade. A winter garden provides space for quiet lunches and congregation, while the center's original maze of confusing passageways has given way to a glass circulation ring and better way-finding. The goal, says SOM partner Richard Tomlinson, was to integrate the complex into the surrounding city, and in particular the waterfront, which is undergoing a dramatic overhaul, part of a slew of new projects.

For example, with public and private funds, the Detroit Riverfront Conservancy has begun to convert the city's industrial waterfront into a 4.5-mile sliver of bike paths, skateboard parks, and fishing areas, dubbed the RiverWalk. The plan also includes turning abandoned cement silos into art installations.

Last fall, Compuware moved into its new headquarters. The company's 15-story office tower, designed by Rossetti Associates, is part of a larger redevelopment called Campus Martius, which is intended to rekindle pedestrian life. The five-block, 9.2-acre, mixed-use development is scheduled to open late this year and will include office space, restaurants, and retail as well as a hotel and loft-style apartments, all anchored by a public square, including a band shell and an ice-skating rink.

Meanwhile, the Detroit



The Detroit Riverfront Conservancy has begun to convert the city's industrial waterfront into a 4.5-mile RiverWalk.

Symphony Orchestra opened the Max M. Fisher Music Center, designed by Diamond and Schmitt Architects, in October 2003. The $60 million rehearsal and performance space is an addition to the acoustically acclaimed Orchestra Hall, which was rescued from the wrecking ball in 1989. It is part of a three-phase plan to revitalize its Woodward Corridor neighborhood.

Developers have also made strides in restoring what remains of the city's architectural legacy, including pre-Depression-era Albert Kahn skyscrapers, plush Jazz Age movie palaces, Gothic Revival mansions, and Prairie Style homes (ghostly reminders of more prosperous times), many of which have been abandoned and derelict for decades. For instance, the Fox,

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Gem, and Capitol theaters have been restored and now form the heart of a new entertainment district. In addition, Schervish Vogel Consulting Architects has restored nine historic buildings in the city's Harmonie Park.

Change is also creeping into a few of the city's more desirable neighborhoods, thanks to speculation and investment in these areas. Between 2000 and 2003, building permits for single-family homes tripled, and real estate values are on the rise for the first time in decades as pioneers move into the city's historic districts and into Midtown loft conversions.

Looking beyond development

Yet even as Detroit's long urban winter may at last be thawing, there is no guarantee the city's remaining landmarks will survive its latest renaissance, or that its empty spaces will be filled with architectural works befitting its heyday. The administration has called for 13 of the city's most prominent ruins to be renovated or demolished before the Super Bowl kicks off in 2006. But despite new tax credits and other state and federal incentives, the cost of building and renovating existing structures can still outpace market values. More critically, Detroit continues to hemorrhage people. Between 2000 and 2003 alone, the city's overall population fell by 30,000, and it has shrunk from nearly 2 million in the 1950s to 911,000 today.

Thus, while subsidized investments may be helping to reconfigure Detroit's skyline, there are some who question whether rebuilding alone is the answer. The biggest challenge for planners remains knitting together the city's sprawling, frayed, and isolated neighborhoods. As the population has shrunk, so has the city's tax base. In much of Detroit, it is common to find a single home standing on what was once a lively residential block. Basic services such as dry-cleaning, supermarkets, and restaurants can be few and far between. In some neighborhoods, liquor stores often double as food marts. Garbage pick-up is erratic, while power outages happen regularly.



Creative reuse: The Michigan Theater has been converted into a parking lot.

"In my lifetime, I don't think Detroit will ever get near the population it used to have," says Vogel. "In the meantime, what does one do?"

It's a question that is being asked not just in Detroit but in cities around the world. In January, Shrinking Cities, a Berlin-based group, launched a competition to address blight and abandonment in cities that have suffered dramatic shifts in population. The project, which was inspired by the massive exodus from East Germany following



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the fall of the Berlin Wall, will look at the effects of depopulation in four postindustrial regions: Manchester and Liverpool in the United Kingdom; Ivanovo, Russia; the Halle-Leipzig area of Germany; and Detroit.

Research is already in progress, and an exhibition is planned for September in Berlin. The show will include responses to abandonment, from failed urban revitalization projects—such as the "illuminated fields" in the former East Germany, where planners built the footprint of a community hoping to attract investment that never came—to survival farming in Ivanovo, Russia.

"We need to look at Detroit and other shrinking cities in more than just a negative way," says Dan Pitera, AIA, director of the Detroit Collaborative Design Center at the University of Detroit Mercy and one of the curators representing Detroit.

Rather than "filling in the gaps" and recreating the city in an image of its past, he sees the potential to forge a new kind of urban experience, one that does not mimic the density of cities like New York or Tokyo, but rather recasts the city's negative spaces in a positive light.

"WE NEED TO LOOK AT DETROIT AND OTHER SHRINKING CITIES IN MORE THAN JUST A NEGATIVE WAY."—DAN PITERA

"Instead of trying to refill that space, what if all that land became meandering parks around the city?" he asks. "Perhaps there's something more dynamic that could occur that could not happen in any other city of this scale."

In fact, in 2000, the Detroit Collaborative Design Center helped draw a vision for the city's East Side along these lines. Recognizing a grassroots movement to plant vegetable gardens and community farms on abandoned lots, the plan, called Adamah ("of the earth" in Hebrew), envisioned green spaces and small-scale agricultural industries mixed with high-density residential development in a neighborhood with one of the highest rates of abandonment in the city.

Meanwhile, artist Tyree Guyton's Heidelberg Project, a collection of abandoned homes painted in polka dots to protest the neglect of Detroit's near East Side, is one of the city's most visited tourist attractions, despite successful attempts by the city to tear down parts of the sprawling art project on two separate occasions. Closer to Downtown, Andrew Zago's park pavilion for the Greening of Detroit, a simple shelter made of steel and plastic tubing that acts as a gathering spot, has inspired a sense of community building and possibility. At the same time, some of the city's most blighted buildings have acquired a certain post-apocalyptic cache. The United Artists Building, with its individually tagged windows, has become an urban canvas, and the Michigan Theater, now an immense private parking garage, was immortalized in the Eminem biopic *8 Mile*.

Still, as city planners are quick to point out, developing the city's urban prairies into green spaces and art installations does little to bolster tax rolls. "Green space development is wonderful," says chief city planner George Dunbar, but he says the city's goal remains to attract new residents and development. "It's time for new growth."

Weighing in on the other side, Pitera says, "We have an opportunity to make a great city again. But my point is how do we make this shift and do thoughtful interventions in our environment. Not all building is good building." A point those who lived through Detroit's last renaissance understand only too well. ■



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When good architects design bad buildings: Beauty trumps ethics

Critique

By Michael Sorkin

The first architectural protest demonstration I remember joining was organized by a group called the Architects Resistance. It took place in front of the offices of a prominent architectural firm in New York and was aimed at the firm's work on a mixed-use office tower in Johannesburg. I don't remember much about the event itself, but the leaflet that was being handed out asserted (and I paraphrase) that somewhere in the drafting room above, there was an architect designing two sets of bathrooms, one for blacks and one for whites.

The ethical case seemed very clear: Here was a piece of architecture that—in the most nitty-gritty part of its program—was racist. But architects are rarely confronted with an ethical dilemma as sharp and functional as this. Our dilemmas tend to be either more ambiguous (ideas about appropriateness) or more general (supporting the machine that allows us to consume our disproportionate share of planetary resources). And, the whole thing is contaminated—as Robert Campbell pointed out on these pages [RECORD, May 2004, page 67]—by a habitual distinction between the ethical and the imaginative, posed as if they were in opposition, some sort of zero-sum proposition.

The core of the ethical performance of a building lies in its program, and we must take responsibility for a building's behavior as well as its artistic presence. Indeed, "good design" is often a cover for the ethically questionable; witness the old saw, "If you want to build a bad building, hire a good architect. And if you want to build an outrageous building, hire a distinguished architect." The most outstanding instance of this tactic is, of course, Ground Zero, where "distinguished" architecture has been used to con the public into supporting a massive office scheme. But there are other examples, as well. Suddenly, after years of disheartening indifference, the city is awash with proposals by global star architects, and a clear majority seem to be involved in leveraging projects of dubious ethical provenance.

Contributing editor Michael Sorkin practices architecture in New York City and is the director of the graduate urban design program at City College of New York.

Sins against neighborliness

To be sure, none of these projects houses a program—like apartheid—that rises to the level of the truly reprehensible. And it is also true that recent theorization of architecture tends to locate ethical content in places too small to support it, belaboring expression while taking too little interest in effects. Most of the infractions today are sins against neighborliness and comity, in which the presumed vision of the architect trumps (and often Trumps) any sense of obligation to existing communities and compacts.

This is murky territory. We all agree that we shouldn't be designing concentration camps. And, we all agree that an architect is obligated to see to the safety of the occupants of his or her project, whether by assuring egress, avoiding toxic materials, or resisting seismic loads. We are also agreed, in more general terms, about our duties to the planet, however they may be fulfilled in the form of lip service and window dressing, like those windmills Kohn Pedersen Fox (KPF) has put on the hulking proposal for the Jets Stadium giveaway in Manhattan, or those that Skidmore, Owings & Merrill may or may not intend for the ridiculous Freedom Tower. Of course, no one discusses the energy savings that might be realized by not building these two white elephants.

Agreeing on values

Architecture does not create community, but it can provide a setting conducive to the playing out of collective values. Despite fatuous claims that the genius of the city lies simply in its wanton dynamism, historic cities like New York are the records of compact and consent, public agreements about values worth preserving, whether in individual buildings, neighborhoods, or in the security of individual members





A trio of apartment towers on the Hudson River (left) by Richard Meier are elegant but break the scale of the neighborhood, as does a proposed tower by Jean Nouvel in the Meatpacking District (below), which never got approval.

of the commune. In New York, as in many places, architecture acts within a dialectic between gentrification ("development") and our historic rent laws that seek to codify and defend a diversity in which the market takes no interest. In many communities, including my own in Manhattan, these laws are the only thing preserving a mix of people of varying incomes; without them, market forces would push out the less affluent in favor of an upper-class monochrome.

An implicit agreement

Where should we draw the line on the architect's complicity? The big planning argument in my neighborhood these days is over a dramatic upscaling of the Hudson River waterfront. The poster children for this are two (soon to be three) apartment buildings by Richard Meier, whom many activists identify as Public Enemy Number One. I am less disturbed than many of my neighbors by the sleek white towers, which—although focused on the river view—have fairly brutal concrete elevations to the neighborhood out back. I am less enthusiastic about their lack of sun control on their glassy western elevations (just add a few more tons of a/c) and don't quite see why there need to be three.

The point, though, is that these buildings embody a proposition about the scale and character of place, on which the architect has implicitly signed off. I believe that this entails, at the very least, a burden of explanation, an argument why this transformation is a good thing.

About 20 blocks south of the Meier towers, Norman Foster has proposed an apartment building that sits between two much-used neighborhood parks. Here, scale is also an issue, although for very different reasons. Because of its size, the tower will cast shadows on these parks, some sports fields, and three schools—one side in the morning and the other in the afternoon. Given the scarcity of public open space in the neighborhood, this is a very serious matter, one on which a conscientious architect should have an opinion. Of course, it may be that the big tower is a stalking horse, providing wiggle room for scaling back to something more "reasonable" when public protests arise. But should architects facilitate such gamesmanship? Should they ever produce projects that, if built, would have a clearly deleterious effect on a neighborhood?

Making exceptions

The same question arose a few years ago concerning a project by Jean Nouvel for a hotel in the Meatpacking District, not far from the Meier condos. Here the issue was the great height of the engagingly slim tower in a district whose relic texture—key to its character—is predominantly two stories. While the project was a prima facie violation of context, its proponents used the argument—a classic of the false opposition between the ethical and imaginative—that the tower was sufficiently exceptional as to excuse trodding on the existing convention of scale. Fortunately, public opposition shot down the too-big project, much as it did a particularly awful one by Philip Johnson/Alan Ritchie Architects 15 blocks south of there. The developer of the overbearing Johnson project tried to sell it by papering the community with posters describing it as a "vertical work of art," the mantle of artistry again conferring the right to its narcissism of scale.

Over in Queens, design is well advanced on New York's first project by Richard Rogers, a building for Silvercup Studios, a motion-picture-production facility. Located on the East River, directly south of the beautiful Queensborough Bridge, this building—a Beaubourg-like podium housing the film studios and three very tall towers on top—will irrevocably destroy the bridge's breathing space. A handsome span now visible in its all-at-once-ness will forever be placed in ensemble with this big new structure, which—however elegant it might be on some other site—will eternally alter (*ruin* is perhaps a better word) a view that has been part of our civic imagination for a century.



The developer argued that this tower by Philip Johnson was "art," but the public didn't approve.

The same effect is produced by two mindless buildings—one by KPF, the other by Kevin Roche—recently completed by New York University just south of Washington Square. The KPF item, an addition to the law school, sits directly behind McKim, Mead and White's fabulous Judson Church. The giant, new, redbrick lump—for which a house once occupied by Edgar Allen Poe was torn down (and whose facade has been saved as merely a decorative relic)—has now also destroyed the beautiful profile of the church spire against the sky.

The horrible Roche building contributes to the dramatic upscaling of its street (a process begun years ago by Philip Johnson's mammoth university library) and has the same effect on the Washington Square Arch as the KPF building does on Judson Church. From far up Fifth Avenue, the beloved arch (just restored) is overwhelmed by the lumpy limestone mass of the Roche building, which arrogantly insinuates itself into a stirring and measured public space.

A texture of forgetting

Jane Jacobs's new book, *Dark Age Ahead*, describes the way cultures forget their own values and offers a cautionary tale of how quickly this can happen. The projects I've mentioned all contribute to this texture of forgetting. Cities are civilization's mnemonic, a contract in stone between past and future. The preeminent value of the good city lies in its neighborliness, its respect for the other, for existing and historic patterns of life. In my last piece [RECORD, June 2004, page 117], I wrote of the difficulty of imposing collective symbols on communities in fundamental disagreement. The ethics of architecture requires loving your neighbor, not dictating to her. This means some circumspection about designing mausoleums of good intentions and casting shadows in other people's gardens. ■

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It's Comforting to Know We're There.

Jerusalem needs a Museum of Tolerance right now

Commentary

By Rabbi Marvin Hier

In his June 2004 Critique column, Michael Sorkin examined plans for a Museum of Tolerance in Jerusalem, designed by Frank Gehry. Sorkin criticized the politics and symbolism of the project at a time when Israel is building a controversial "security fence," and questioned Gehry's involvement. Rabbi Marvin Hier, the client for the museum, responds below.

Rather than an architect's critique of Frank Gehry's brilliant design of our Museum of Tolerance Jerusalem, Sorkin offers a political attack on Gehry's right to participate in the project in the first place. He writes, "It is not possible to build this project without an opinion on larger issues—real issues of tolerance—in the region. What is Gehry's? This is not a question of the use of titanium versus Jerusalem stone, it is one of justice."

Rabbi Marvin Hier is the founder and dean of the Simon Wiesenthal Center and the Museum of Tolerance.

Why do I shudder when I hear such words, especially from people eager to be viewed as benevolent, peaceful, and honest? Because it reeks of McCarthyism, demanding that artists declare themselves publicly by saying, "It's okay to let me in, I am one of you, I am not the enemy." Perhaps actors should be given scripts only if they first declare themselves as Democrats, and people who work for banks or oil companies, only if they can prove their credentials as Republicans.

To grant permits on the basis of how one votes or feels on issues, or the way a particular group interprets justice, is a sure recipe for anarchy. Today, Sorkin's argument against Gehry's participation is that you cannot separate the security fence Israel is building from the Museum of Tolerance Jerusalem. Perhaps tomorrow, others will deny architects or teachers commissions because they were either for or against the death penalty, or because they accept or don't accept same-sex marriages. To me, such pre-positioning brings back the worst of our past, sowing distrust, hatred, and division, while the self-righteous search everywhere for the enemy amongst us, under the guise of human rights. It is a cynical and slippery slope to insert politics and polemics into a project whose sole purpose is to raise the threshold of decency and dignity among the people of Israel.

We should not have to pay the price of solving the Arab-Israeli conflict as a prerequisite before some self-appointed high priests grant us the right to build the Museum of Tolerance in Jerusalem. The lessons of tolerance and respect for others were needed before the intifada began and will surely be needed when it ends.

Which brings me to my second point. To Michael Sorkin, everyone connected with the Museum of Tolerance Jerusalem has an agenda: the Simon Wiesenthal Center, Frank Gehry, and Ehud Olmert, the former mayor of Jerusalem, now vice prime minister of Israel. But isn't it fair to ask, what about Sorkin himself? Could he have an agenda? And the critics he cites, like Meron Benvenisti and Esther Zandberg, do they have agendas, as well?

For example, Sorkin failed to mention that he organized a design conference on Jerusalem and the West Bank and edited a book called *The Next Jerusalem: Sharing the Divided City* (2002). What if we judge Sorkin in the same manner that he judged Gehry, and charge him with propping up and legitimizing Arafat and the Palestinian suicide bombers? Would that be fair?

Then there is Esther Zandberg, the Tel Aviv–based architecture critic of *Haaretz*, who I suspect really prefers being a political commentator, because the first time I met her after a press conference in Jerusalem, she insisted, "We don't



The Museum of Tolerance Jerusalem, designed by Frank Gehry, has become the focus of a charged debate on design and politics. Construction began in May.

need a Museum of Tolerance here. Israel knows what it has to do to achieve tolerance. It should withdraw to the June '67 borders." I asked her, "What does that have to do with our project or with architecture?" There you have it again—Sorkin's "without an opinion on larger issues."

Now for some factual errors.
1. Sorkin writes that originally the Museum of Tolerance Jerusalem planned Holocaust exhibits. Not true! Out of respect to Yad Vashem, no exhibits on the Holocaust were ever planned or even discussed.
2. He quotes Zandberg as being miffed because we "refused to make plans and images of the project public despite their having been published in 2002 in the Japanese magazine *GA*." Again, not true! The Museum of Tolerance Jerusalem had no idea that any photos were provided to a Japanese magazine—they never came from the Simon Wiesenthal Center. The center did release all the photos in Israel, and the model of the Gehry project remained in Israel at Jerusalem City Hall, where residents of the city could see it for themselves. It's revealing that neither Sorkin nor Benvenisti or Zandberg ever make mention of the 300 Israeli architects who attended Gehry's lecture on the project in Jerusalem, where both he and the project were very well received.
3. Benvenisti asserts that the museum is "planted on part of an ancient Muslim cemetery." This is absolutely not true! No portion of the Museum of Tolerance Jerusalem complex is being built on a Muslim cemetery.

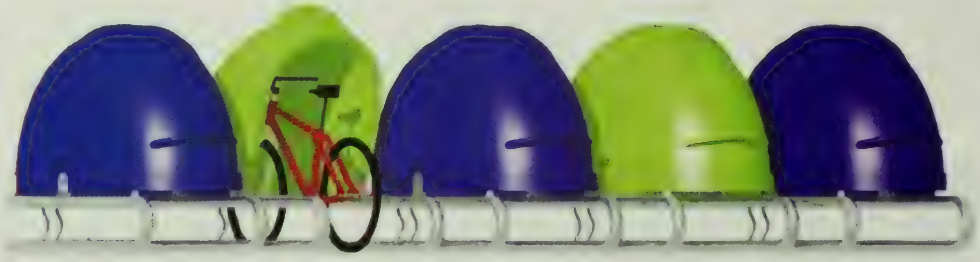
Finally, as Israel confronts the 21st century, what greater need is there than to address the great internal divide that separates Jews from Jews and that has the potential to implode the country from within? The Museum of Tolerance Jerusalem does not have the luxury to wait until all the great issues are resolved. We are not the government of Israel, and only a government has the wherewithal and responsibility to make peace.

THE MUSEUM OF TOLERANCE DOES NOT HAVE THE LUXURY TO WAIT UNTIL ALL THE GREAT ISSUES ARE RESOLVED.

The museum's role is to reach out and teach tolerance one step at a time—between the religious and the secular, between Sephardim and Ashkenazim, between the haves and the have nots, between Jews and their Christian and Muslim neighbors. For 11 years, that is what the Museum of Tolerance in Los Angeles has been doing. More than four million visitors have experienced the museum. Its acclaimed Tools for Tolerance for Professionals programs have trained 60,000 police and 30,000 educators on issues of tolerance and diversity. More than 110,000 high school students come to the museum every year.

Can you imagine the potential of a complex that will house two Museums of Tolerance, one for adults and one specifically for children; an international conference center that will host scholars and delegates from around the world; an education center where outstanding teachers will conduct daily classes and seminars; a theater for the performing arts that will screen important films and host lectures; and a grand hall that will become the "living room" of Jerusalem? This project is far too important and vital to Israel's future to be sidetracked by internal bickering, professional envy, or philosophical posturing that can't hold a candle to the need to have such a museum built as soon as possible. ■

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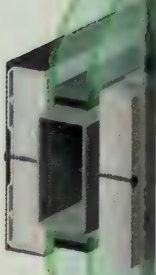
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A new memorial squanders a sparkling opportunity

Commentary

By Paula Deitz

On Memorial Day weekend this year, I attended a family burial in a small New England cemetery on the coast of Maine. As we arrived, several young men from the town jumped out of pickup trucks with stacks of American flags and proceeded to place them in metal holders by designated graves—an annual ritual to honor those who served their country. We requested one for the fresh grave of our relative, a veteran of World War II, thus entering him on the list of those to be remembered or memorialized in perpetuity by the community.

The next day, driving back through the countryside, we observed these flag-dotted cemeteries repeated in every town and village. As we passed by these tranquil local scenes of remembrance that stretch across America, the world was given its first views of the more grandiose national World War II Memorial at its dedication on the Mall in Washington, D.C. Although this project, controversial in the design stage, had been in the works since 1993, when Congress authorized the creation of the memorial, the stark reality of its presence raises serious questions about both its design and appropriateness.

A few words first about the site. With the exception of the Washington Monument, completed in 1885, the creation of the Mall on former marshland was a 20th-century concept (though originally envisioned in Pierre Charles L'Enfant's 1792 plan). In 1901, the Senate Park Commission located Henry Bacon's Lincoln Memorial at the west end and called for a long Versailles-like canal with a cross arm and a terminal pool. By the time the tree-lined Reflecting Pool was constructed in 1923, temporary War and Navy buildings installed along the Mall eliminated the possibility of a cross canal. However, the final ellipse was built, and called the Rainbow Pool for the showy effects of sunlight on its tall jets of water. In 1995, the Commission on Fine Arts selected it as the location for the World War II Memorial. First designated for presidential memorials, the Mall was subverted into war memorials with the completion in 1982 of Maya Lin's understated, contemplative Vietnam Veterans Memorial. When another memorial was built for Korean War Veterans, the pressure to seek national recognition for World War II was inevitable.

Before arriving at the World War II Memorial, it is instructive for the visitor to begin at the Jefferson Memorial, itself only completed in 1943 in John Russell Pope's Roman style. From there, following the cherry tree promenade around the Tidal Basin, one approaches a path that flows through the Franklin Delano Roosevelt Memorial integrated into the parkland. Before it opened in 1997, its designer, the landscape architect Lawrence Halprin, had worked for 20 years sketching the rough pink granite walls of open rooms representing Roosevelt's four terms. A series of waterfalls increase in chaotic ruggedness and torrential foam to form a crescendo in the "War Room Fountain." Inscribed in stone is Roosevelt's "I have seen war. I have seen blood running from the wounded … I have seen cities destroyed … I hate war." The last phrase is repeated on broken stones piled on the ground.



At dusk the World War II Memorial's surfaces do not reflect the same "blinding whiteness" as they do during the day.

With this grim reality of war in mind, it comes as a shock a short walk beyond to encounter the pristine blandness of the facing pylons that form the main structures of the World War II Memorial: two semicircles of slotted pillars, representing states and territories, with central triumphal arches symbolic of the European and Pacific-Asiatica theaters of war. These are set around an immense elliptical, two-toned granite plaza with, at its center, a sunken reincarnation of the Rainbow Pool and its waterworks. Designed by Providence, Rhode Island, architect Friedrich St. Florian, the quasi-Classical style he chose to employ celebrates victory more than it commemorates individual sacrifice—a morale booster for a country that was never to know that kind of clear-cut victory again.

One need only recall the dignity of the Tomb of the Unknown Soldier in Arlington Cemetery or the subtle architectural expression of Sir Edwin Lutyens's Cenotaph in London, both drawn from the Classical tradition, to know everything that the World War II Memorial is not. Though some have likened its scale and form to the overbearing public architecture of Germany and Italy between the wars, in truth, St. Florian's design lacks any sense of style or imagination. For example, whether Classical or Modern, architecture should articulate or modulate through contour a sense of light and shadow to achieve a modicum of elegance. The characterless, blocky surfaces of the memorial's structures and the over-

Paula Deitz is editor of The Hudson Review.

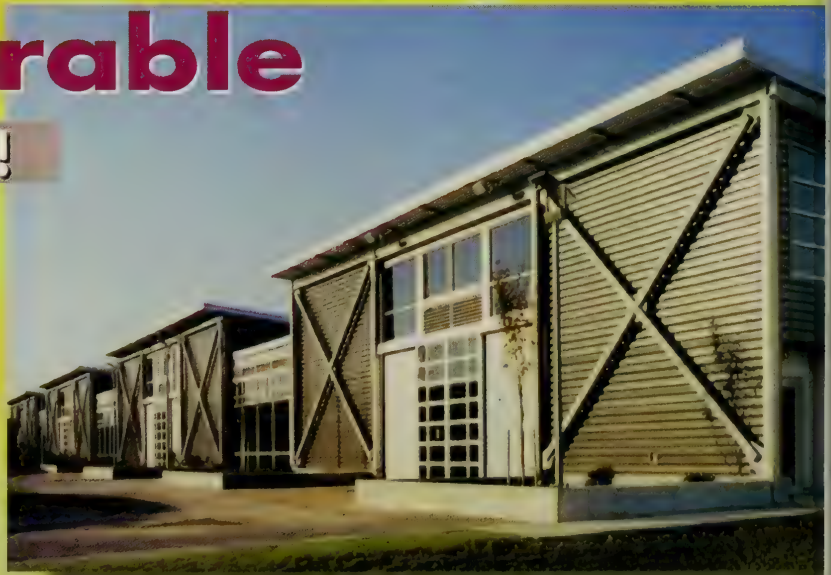
size open plaza radiate a blinding whiteness, particularly notable in Washington's humid summer heat. Whereas the Roosevelt Memorial allows the visitor to think between inscriptions and episodes and the Lincoln Memorial offers the cool majesty of a Greek temple interior, here there is no relief from the onslaught of words and symbols.

An architecture professor at the Rhode Island School of Design, St. Florian tends to exaggerated, overscaled designs that may succeed in locations like Waterplace Park in Providence, where he joined three department stores under one roof in his Providence Place Mall, with its three-story-high Winter Garden. But despite the efforts of the Commission on Fine Arts to scale down the war memorial to something less monumental, the effect is still overly heavy. It might have been better to leave the original arcade that was transposed into meaningless, elevated pillars tied together by a bronze rope and ornamented with heavy, door-knockerlike bronze victory wreaths of wheat or oak leaves. An even larger wreath of laurel appears under the arches suspended horizontally by the beaks of four bronze American eagles, forming a kind of canopy or baldacchino.

For all St. Florian's stated objective to respect the "utopian spirit" of Washington's "preeminence of Classical architecture," the design misses by a wide mark that breathtaking creative artistry and spirituality required for so important an occasion. Also, he chose to open the elliptical formation of pillars onto a slanted esplanade to 17th Street, thus turning the memorial's back on the Reflecting Pool, entry from which would have been the more poetic solution. Where hushed reverence is called for, there is instead a vast playground of a plaza with children wading in the pool between jets of water. And tour bus groups line up to be photographed beside their state pillars.

With regard to the Freedom Wall that encloses the memorial on the west side, it features a panorama of 4,000 gold stars on a dark blue ground representing the 400,000 service people who lost their lives. During World War II, every family that lost a father, husband, or son was given a square navy blue banner with a single gold star to hang in the front window. That star became an expression of grief for an entire neighborhood and made everyone, including school children passing by each day, sad witnesses to the sacrifice of war. Multiplying it into a field of stars is an effrontery that dilutes the power of that remembered symbol.

Is there anything good about the World War II Memorial? Yes, some of the surrounding landscaping by James A. van Sweden, with greenswards at the sloping entrance as an attempt to marry the architecture to the Mall, and including the restoration of the double allées of elms along the Reflecting Pool that make it as grand as the tree-lined canal at Courances in France. But also the double flag poles at the entrance that would have been sufficient unto themselves with nothing more than a dramatic water feature tumbling into the Reflecting Pool. Like twin masts, they are set into circular granite bases with the seals of the branches of the armed services in bronze and a simple inscribed message: "Americans came to liberate, not to conquer, to restore freedom and to end tyranny." That says it all. Perhaps a dark blue flag with one gold star could have been flown beneath the stars and stripes. Given such a lone inspirational image, one would almost hear the bugler sounding taps. But for now, the Roosevelt Memorial, with its contemplative atmosphere and symbolic representation of war and sacrifice, would appear to be the true World War II Memorial, as is that rural seaside cemetery in Maine and its like across America. ■

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Snapshots of a profession: Looking around the world at the big picture of architecture

Books

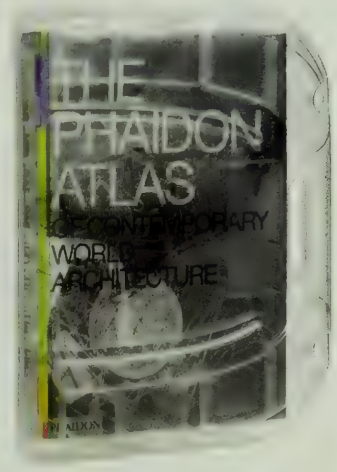
The Phaidon Atlas of Contemporary World Architecture, *edited by Phaidon Press. New York, London: Phaidon, 2004, 824 pages, $160.*

At nearly 18-by-12 inches and weighing 15.5 pounds, *The Phaidon Atlas of Contemporary Architecture* makes *S, M, L, XL* look like a pocket guide. (In case you're wondering, Rem's fat opus tips the scales at a mere 6 pounds, though it does have more pages—1,344.)

Luckily, the *Atlas* has more than just heft working for it. Organized into six geographic regions (Oceania, Asia, Europe, Africa, North America, and South America), the book takes readers on a tour of some 1,100 buildings in 75 countries—all completed since January 1998. So it presents a snapshot of the past five years of architecture from around the globe. A panel of 150 international jurors—including critics, curators, journalists, academics, and practicing architects—selected the buildings, says the publisher.

Most buildings get a full or half page to show off in color photographs, drawings, and a short text. (A few projects, such as Renzo Piano's Jean-Marie Tjibaou Cultural Center in New Caledonia and Foreign Office Architects' Yokohama International Port Terminal get two-page spreads.) Although half a page might not sound like much space in which to present an entire building, these are big pages and their disciplined layouts do a good job of giving the reader a strong sense of what the architecture is all about. If you want an in-depth understanding of a particular building, you'll have to go elsewhere. But for an overview of the current state of architecture around the world, you won't find anything better than this tome.

Comprehensive in its coverage, the *Atlas* includes buildings in



places like Urubo, Bolivia; Adis Abeba, Ethiopia; and Butwal, Nepal, as well as all of the usual locales. It finds space for talented young architects such as Qingyun Ma and Yung Ho Chang in China and Shuhei Endo of Japan, but misses a few others, such as Hitoshi Abe and Taka and Yui Tezuka in Japan. It also manages to be more timely than one would expect for such a grand effort, getting very recent projects, such as Frank Gehry's Walt Disney Concert Hall (which opened at the end of October 2003), into the mix.

Maps and charts with neat data on such things as population and urbanization by country give perspective to what is essentially a collection of individual pieces of architecture. And indexes of architects and buildings help the reader navigate an ocean of pages.

Because the *Atlas* presents a panoramic look at the architecture of a particular moment (1998–2003), it will actually become more valuable if accompanied by successive volumes. So I hope its editors aren't planning to catch their breath too long; it's already time to start working on the next installment. *Clifford A. Pearson*

The State of Architecture at the Beginning of the 21st Century, *edited by Bernard Tschumi and Irene Cheng. New York: Monacelli Press, 2003, 136 pages, $30.*

With architects being celebrated by the media as master builders renewing cities worldwide, this would seem to be a golden age for architects. Or is it? That's one question Bernard Tschumi posed at a conference at Columbia University in March 2003. Sixty renowned designers and theorists participated in the event and contributed two-page illustrated essays for this book. Some take stock of the present, others lay out strategies for the future.

By organizing the book into themes that juxtapose concepts usually not thought of together—politics and material, detail and identity, envelope and public/private, electronics and perception—Tschumi encouraged contributors to think creatively rather than regurgitate prepackaged lectures. So Robert A.M. Stern, ever the pragmatist, writes in the chapter "Esthetics & Urbanism" that because urbanism is about human life, "it is not about human form. It is not about art movements … What is a good city? What is the good life that we as architects should advocate? We should answer these questions rather than compete to leave our mark on the city through form." Frank Gehry, on the other hand, writes in the chapter "Form & Influence" that architects should stop worrying about the consequences of their actions and allow themselves the freedom to invent. Winy Maas contends that "few architects want to speak of cities anymore. In a time when the culture of objects is transcendent, what architect wants to be an urbanist?"

A few other high points: Andrew Benjamin traces the way style has become associated with national identity, and asks what a cosmopolitan architecture might look like today. Toshiko Mori documents how an ancient technology—weaving—is being put to radical new uses, while



Books

Steven Holl suggests that the potential of materials lies in their power to evoke rather than to dictate meaning. Terence Riley challenges the idea that an architect can practice globally, asking, "despite all the rhetoric, aren't such global figures as Rem Koolhaas, Norman Foster, and Frank Gehry defined in terms of nationality?" And then there's Mark Wigley, who suggests that in a world predicated on movement and flows, the power of architecture may be its ability to give pause.

In a mere 136 pages, Tschumi and his coeditor Irene Cheng have put together a provocative, broadly ranging brew of ideas by some of the most prominent designers and architectural theorists of our day. *Andrea Oppenheimer Dean*

Refabricating Architecture: How Manufacturing Methodologies are Poised to Transform Building Construction, *by Stephen Kieran and James Timberlake. New York: McGraw-Hill, 2003, 180 pages, $20 (paper).*



Few architects have considered building construction—and the culture of how buildings are constructed—as carefully and insightfully as Stephen Kieran and James Timberlake do in this book. The authors have a successful architectural practice in Philadelphia, where they also teach at the University of Pennsylvania.

Kieran and Timberlake look at how we produce things (mainly cars, airplanes, and consumer products) in our postindustrial society, and see in such production an opportunity to improve the quality and speed of construction and design. Automobile manufacture captivates Kieran and Timberlake because it is one of the best examples of a large industry that has moved to "mass customization," delivering cars to customers who can pick and choose features, versus the "you can have any color, as long as it's black" mass-production approach of Henry Ford. Mass customization seems the perfect fit for architecture and building. In reviewing the auto industry's history, the authors offer reasons why architecture and building have never made the transformation: market fragmentation, conflicting social agendas, monotonous designs, and failures in marketing and delivery.

But, as they explain, large segments of the construction industry—more of them abroad than in the U.S—have adopted some of the qualities of mass customization. Increasingly, material and product manufacturers are packaging their wares as "chunks" (the authors' term for integrated units of construction, made up of smaller pieces, that make fit, finish, and installation easier). Zero-clearance fireplaces, which come pretty much preassembled, would be an example. The housing industry has been moving in this direction. During the past few years, manufactured homes—known less-flatteringly as trailers—and modular homes have improved construction quality and lowered costs to become better products than run-of-the-mill, site-built tract houses.

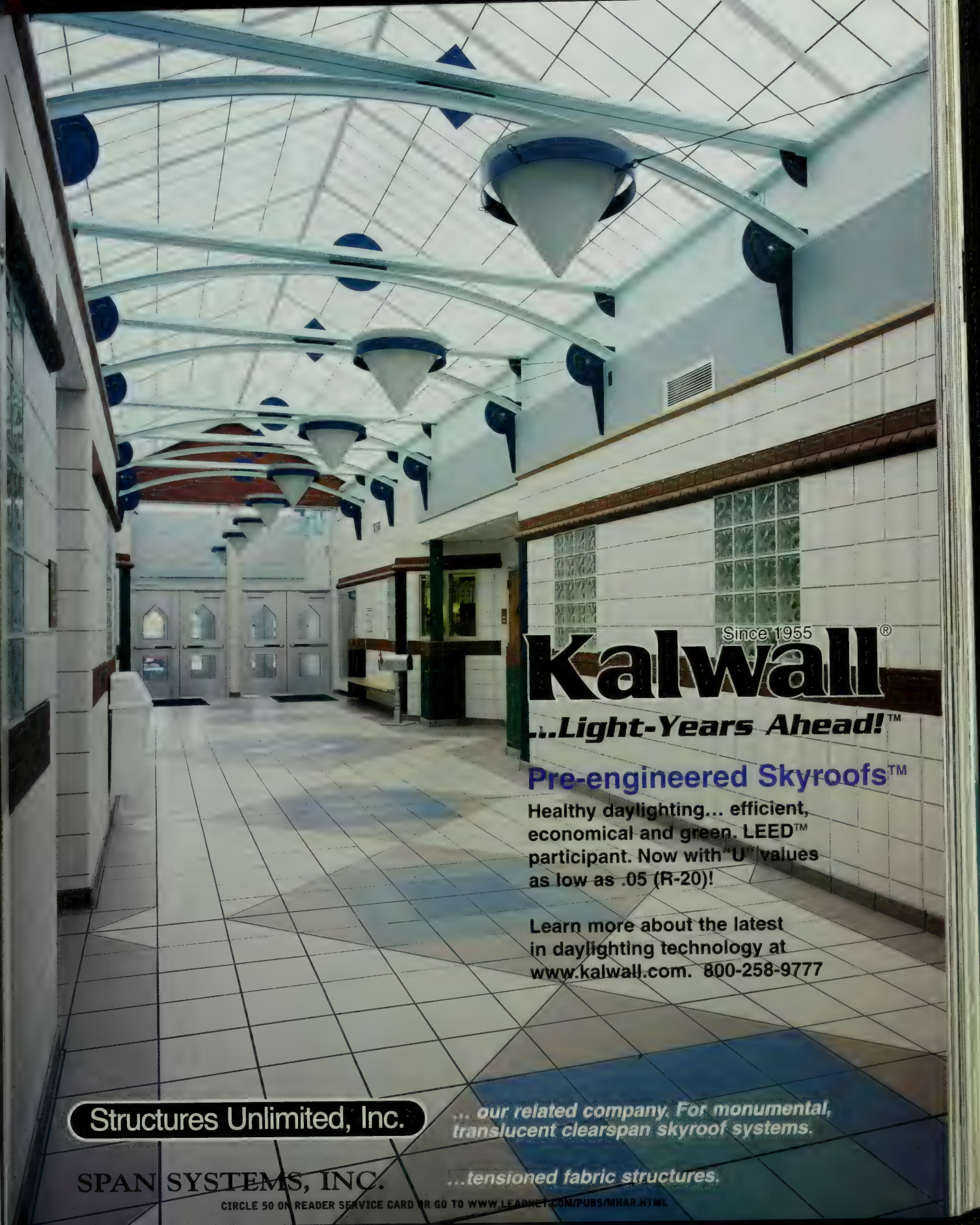
The authors are impatient with these breakthroughs, because the bulk of factory-produced homes, they believe, are aesthetic disasters. But these houses are products of sophisticated market research and product design. Maybe the problem is that people who buy these homes have bad taste. Dealing with that problem will require another book. *Michael J. Crosbie*



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Snapshot



By Robert Such

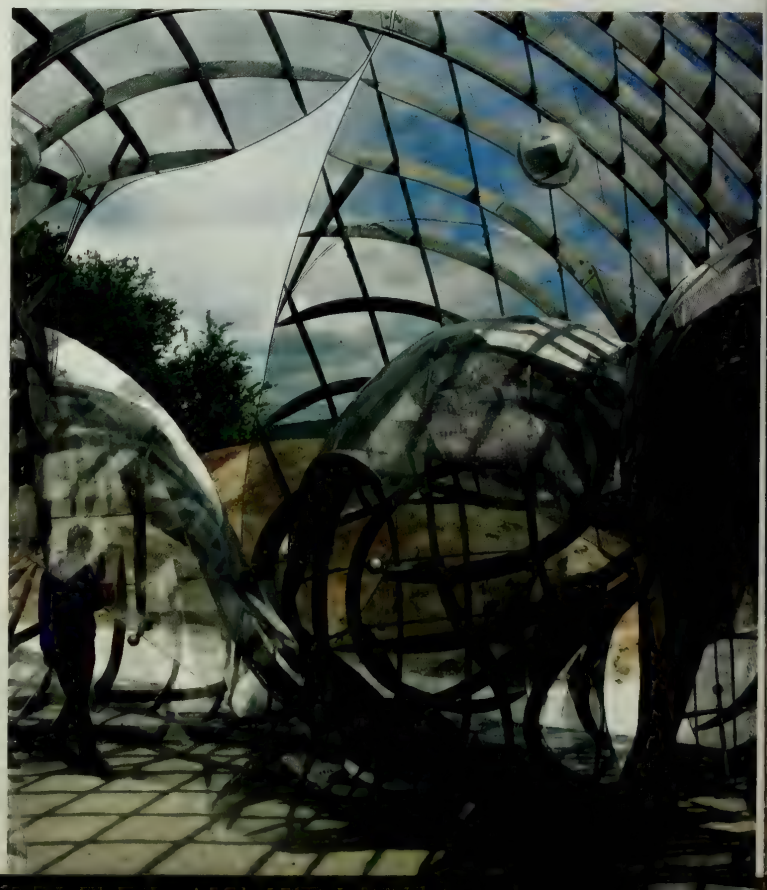
Altering form and sound with movement

Despite its name, Son-O-House is not a house but a permanent public artwork that is both a pavilion and sound installation. Located on the outskirts of Son en Breugel in the Netherlands, it represents the second joint venture by NOX Architects and Dutch composer and media artist Edwin van der Heide. NOX, headed by Lars Spuybroek, first collaborated with Van der Heide on the FreshH2O eXPO pavilion on the island of Neeltje Jans, the Netherlands, in 1996–97 [RECORD, May 1999, page 204].



"I wanted sound that makes people move," says Van der Heide, who also wanted to move sounds from one part of the building to another, and then record the subsequent movement of people. Physical human movement was also the starting point for the pavilion's architecture, whose curves are derived from the





An organic-looking creature made of stainless-steel ribs and expanded steel mesh (right) also emits sounds relating to people's movements within it (below).

human body in motion. Spuybroek and his office analyzed the movements of the limbs, joints, and extremities of people as they walked around a house, and formed a conceptual model, where paper strips codified the complex array of bodily movements. Three types of cuts were developed.

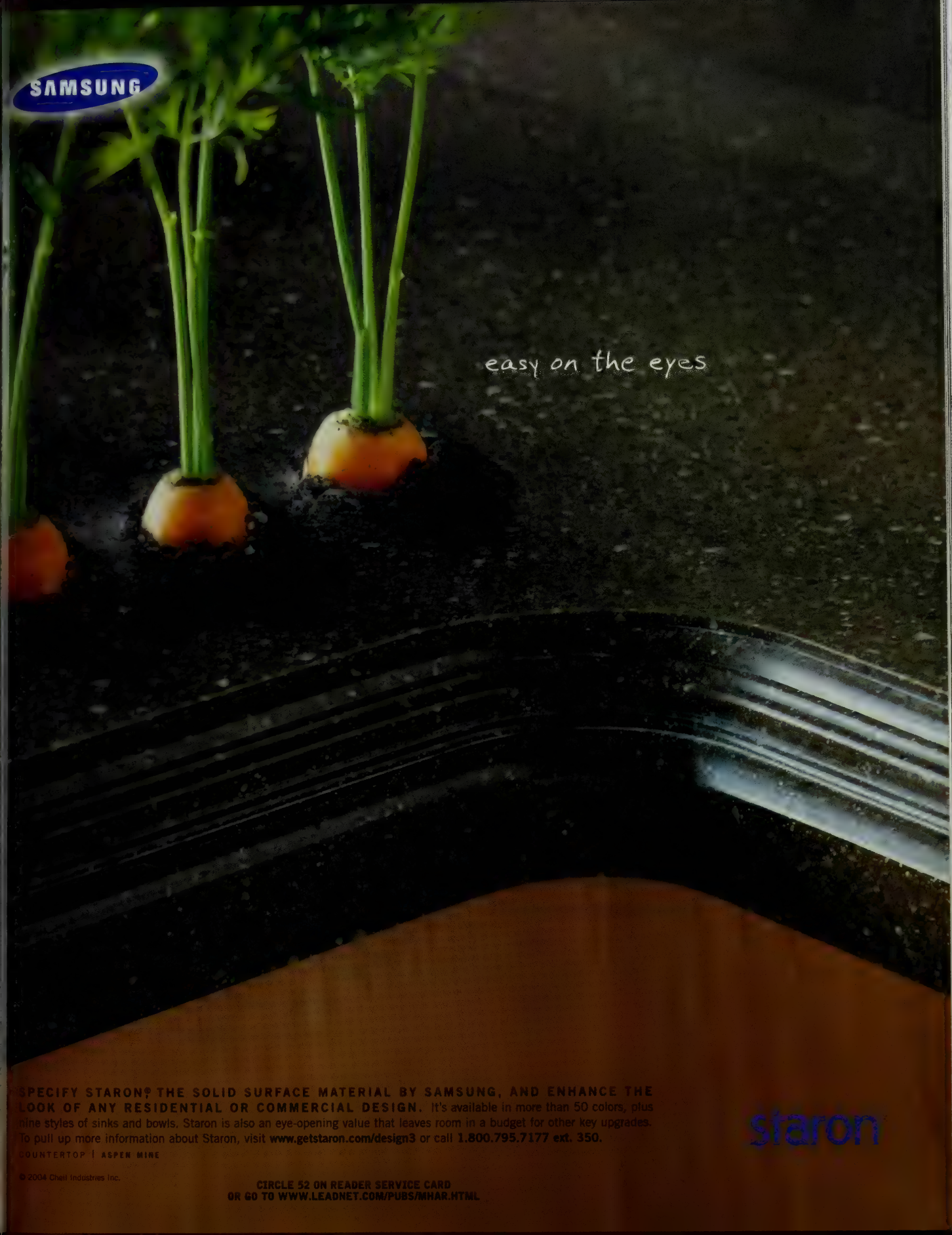
As Spuybroek explains, "When a hip movement," for example, "was accompanied by a joint movement, like the flexing of an elbow or knee, the strip of paper was cut down the middle. We then mapped additional foot or hand movements by another cut." When connected, the flimsy paper strips could support each other. The paper model was digitized and the final arabesque structure made from plasma-cut stainless-steel ribs and expanded steel mesh. The various orientations and the mosaic of stainless-steel panels result in a camouflaged appearance and produce a visual experience that changes with lighting conditions and the visitor's viewpoint.

Visitors to the 3,229-square-foot, interactive Son-O-House must not only stoop to enter some areas of the building, they must also watch out for the uneven concrete floor. As they walk through the space, 24 infrared sensors pick up and record their movements; this statistical information is stored in a database. In the process, 20 speakers distribute shifting acoustic frequencies to create a slowly evolving soundscape.

People in turn respond to these sounds, some of which are dissonant and repellent, by either moving away from or advancing toward them.

Slight phase differences between sound waves from nearby speakers can produce quieter and louder spots again, in response to the visitors' movements. Because of the system that Van der Heide has developed, over time effective sounds are retained and sounds that don't cause movement are eliminated. As a result, people leave behind an acoustic trace of their presence in the building, and returning visitors will share a different acoustic environment.

With this unusual structure, architecture and sound join together to offer visitors different aural and kinesthetic experiences. In their second collaboration, Spuybroek and Van der Heide have dramatically explored the relationship between time, place, and the perception of sound and architecture. ■



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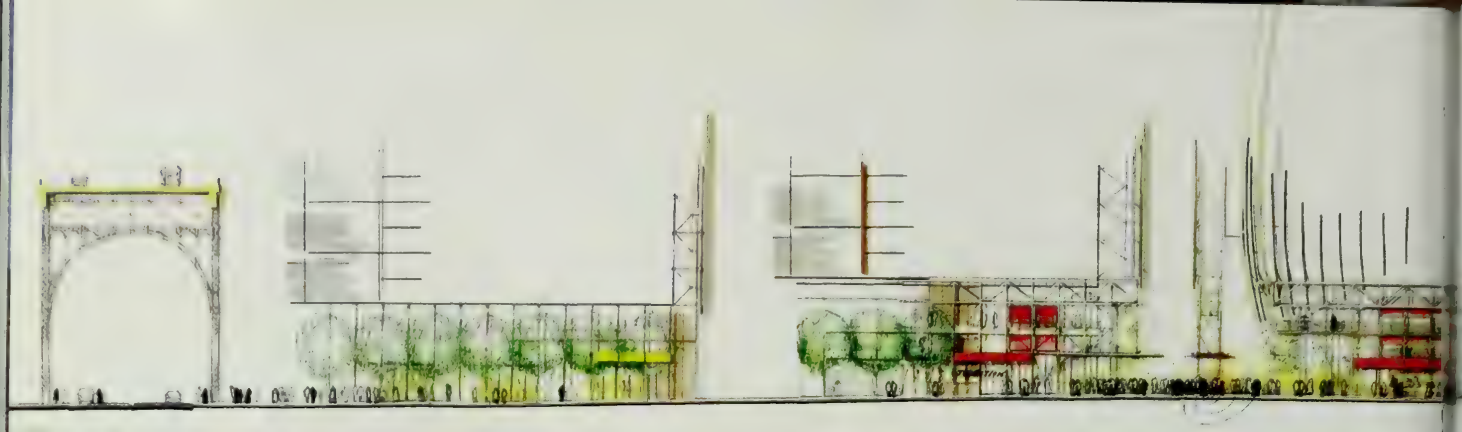








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Columbia launches expansion

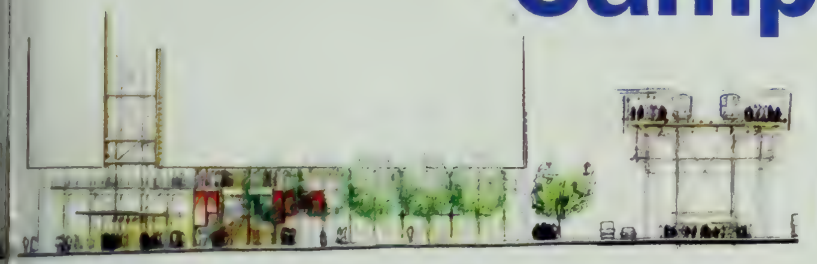
Columbia University has unveiled a 30-year master plan to dramatically expand its campus far north of its current borders. The build out, which would be the most expansive in the school's history, covers 20 acres in Manhattan between 125th street and 133rd street on the north and Broadway to 12th Avenue east to west. The design, overseen by Renzo Piano Building Workshop and Skidmore, Owings & Merrill (renderings, this spread), focuses on openness and community interaction, and is filled with glass structures and ground floors programmed with community-related venues such as stores, banks, and performance and meeting spaces. School facilities on upper floors will include laboratories, classrooms, and performance spaces.

The project will provide the university, whose space per student (326 square feet) is far below most comparable schools, with much-needed facilities, and is expected to generate about 9,000 new jobs and $4 billion in economic stimulus to the city, the university claims. School officials have been meeting with neighborhood residents since 1998, but some neighbors remain wary of an encroaching university presence. Marilyn Jordan Taylor, who leads the SOM team, is cognizant of such fears and says the team is doing all it can to address them: "One important theme of the project is the mutual responsibility of the school to the city and the city to the school." *Sam Lubell*



IMAGES: COURTESY RENZO PIANO BUILDING WORKSHOP AND SKIDMORE, OWINGS & MERRILL

Campus planning is breaking new ground





By Nancy Levinson

Colleges and universities are among the most coveted architectural clients: Educational institutions maintain their existing buildings with a curator's zeal and commission new projects with a collector's zest. These days, many are constructing at a prodigious pace and impressive scale. A tour of schools—elite private universities, select women's colleges, sprawling state schools, institutes for technology and the arts—would show campuses crowded with construction cranes and planning offices bustling with new proposals. The University of California at Los Angeles (UCLA), for instance, has $2 billion worth of construction in the works or just completed, according to campus architect Jeffrey Averill. He says the upheaval has led some to joke that UCLA stands for "Under Construction in Los Angeles."

UCLA is an extreme case, but it's a rare campus that is not a perpetual work in progress, a mix of construction and demolition, renovation and reprogramming. Interviews with university presidents, campus architects, architecture school deans, and practitioners reveal common concerns, and suggest that campus building is motivated by several interrelated factors, including the communications revolution, the rise of interdisciplinarity, rapid advances in the sciences, the evolving expectations of students in a consumer culture, sensitivity to town-gown relationships, and the 1990s economic boom, which encouraged a new generation of philanthropists.

Student needs, community concerns, and long-term goals drive a building boom.

The most fundamental trend in campus planning is the increased emphasis on the planning process itself. This isn't as tautological as it might sound: Campus design is always a balance between short-term imperatives and long-range goals. As Charles Newman, campus architect of the University of Pennsylvania, notes, "Campuses often grow in reactive, opportunistic ways. Certainly that was the case at Penn for many years." Curt Heuring, campus architect of the University of Chicago, says he sees his job as promoting the large vision over

Contributing editor Nancy Levinson is a writer and architect based in Cambridge, Mass.

the incremental move, arguing that "short-term decisions, no matter how quickly they solve an immediate problem, are almost always bad decisions."

Today, the sheer scope of expansion, adaptive renovation, and new construction has intensified the need to make sure that all projects are carefully sited, "part of a comprehensive vision that integrates the physical campus with the identity of the institution," says University of Cincinnati president Nancy L. Zimpher. "Planning is key," agrees Frances Daly Fergusson, president of Vassar. "Without it, an institution will make mistakes, and even the most beautifully situated campus can be ruined by poorly located buildings and bad open space."

Plans go beyond buildings to focus on landscapes

Zimpher's and Fergusson's views are widely shared by their counterparts across the country. Many schools have drafted multiyear development plans—or frameworks, to use a term now in vogue—that go beyond high-profile building to address subtler landscape and environmental elements that can make extensive, sometimes discontinuous places cohere into harmonious academic communities. "Much of it is about creating connections such as paths and walkways, and about using landscape to create good common spaces," says Newman, describing the plan guiding Penn's construction agenda.

Some schools, such as Wellesley College, have drafted landscape master plans, an acknowledgment, as Wellesley president Diana Chapman Walsh explains, "that the environmental setting as a whole is more significant than any individual building." An influential proponent of planning is David J. Neuman, campus architect of the University of Virginia (UVA) and editor of the anthology *College and University Facilities*. Neuman argues that a "strong planning armature" is the key to a successful campus. "Neither memorable architecture nor distinctive landscapes by themselves can make a good campus," he says. "It's the interplay between the two, the order of the whole."

Neuman, who arrived at UVA last year after 15 years as campus architect at Stanford, where he focused on reestablishing the principles of that school's Frederick Law Olmsted plan, has already begun to reshape planning at Virginia. To integrate the many projects on the boards at Thomas Jefferson's "academical village," he has instituted a series of charrettes that bring together architects and landscape architects. "It is my mantra that every single project has got to be thought of as campus building—with building understood as both noun and verb—and to contribute to the whole."

An essential challenge of comprehensive planning, of course, is determining what facilities are needed. One pronounced trend is to focus on recreational, social, and residential places that enhance that elusive quality often called "campus life." Such facilities help schools compete for students, who are apt to evaluate amenities as well as academics. One result is a proliferation of fitness centers that look more like posh health clubs and typically feature airy, glass-walled spaces with weight machines and yoga studios. At Penn, for example, the Pottruck Health and Fitness Center designed by Richard Dattner & Partners has a "wellness" program that supplements the athletics agenda. The Massachusetts Institute of Technology (MIT) recently opened Zesiger Sports and Fitness Center, a glass-walled pavilion by Kevin Roche John

New health-care and arts buildings top changes at UCLA

This year marks the peak of an ambitious capital improvement program on the University of California, Los Angeles, campus. Since 1986, UCLA has undergone nearly $2 billion worth of work in design and construction. While a significant amount of funding has come from FEMA for seismic retrofit work and infrastructure improvement projects, the program has supported a number of new and architecturally noteworthy buildings and additions.



The largest project is the $675 million Westwood Replacement Hospital designed by Pei Partnership Architects, which will replace the current earthquake-damaged medical center. Slated for completion in 2005, it will open as the Ronald Reagan UCLA Medical Center. Nearby, two new health-science buildings, one designed by Perkins & Will, the other by Cesar Pelli & Associates, are under construction. Both will provide advanced lab facilities for health-science and research programs.



Across campus, Richard Meier & Partners is completing work on the Edythe L. and Eli Broad Center (model, left), a seismic renovation and expansion for the School of Arts and Architecture. Glorya Kaufman Hall (model, top, and rendering, center) has undergone a renovation and additions led by Moore Ruble Yudell to support dance, cultural studies, and performance spaces. During construction, displaced departments have settled into a two-year-old "staging" building by Steven Ehrlich Architects, at the opposite end of campus.

Construction will remain an inconvenience for several more years. "Staging of academic and research programs during construction is always a major concern on an active, vibrant campus," says campus architect Jeffrey Averill. "It has been a constant challenge and will continue to be, but the resulting transformation will be well worth the temporary dislocation." *Allison Milionis*



The University of Michigan will expand and renovate its Museum of Art (left and below). Allied Works Architecture has designed the $35 million project, which includes a 57,000-square-foot addition.







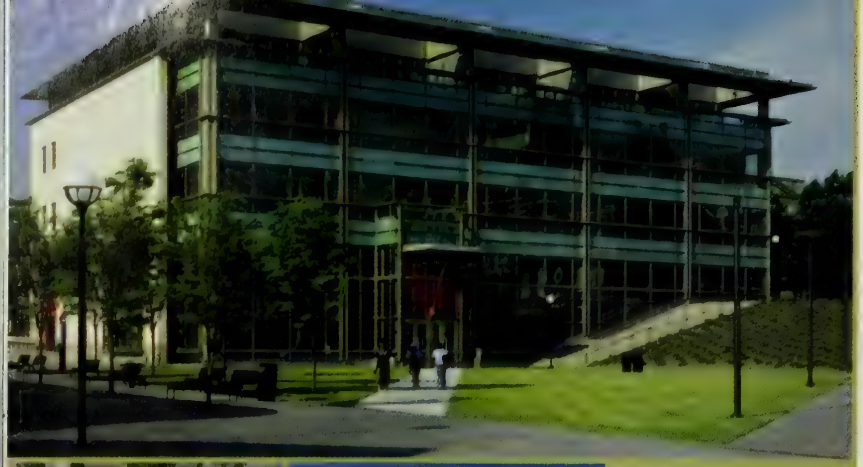


Vassar College has occupied a new Center for Drama and Film (above and right). The $25 million complex, designed by Cesar Pelli & Associates, doubled space to 54,000 square feet while retaining and restoring the 1866 brick facade of Avery Hall. A 320-seat theater, rehearsal spaces, and classrooms are among the facilities.



In summer 2005, the University of Chicago will open the $180 million Interdivisional Research Building by Ellenzweig Associates (left and below). The 456,000-square-foot building will house research labs and a new Institute of Biophysical Dynamics.









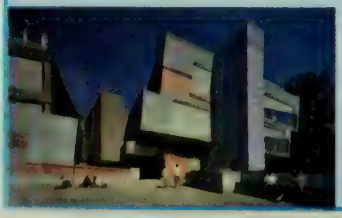
The University of Cincinnati's University Pavilion (above and left), by Leers Weinzapfel Associates, is a "one-stop" gathering place housing a visitor's center, executive offices, and student services such as admissions.

FEATURES

The University of Cincinnati cultivates star architects

The University of Cincinnati campus started out bucolic enough in 1895, when the then-municipal university moved to city-owned parkland in a streetcar suburb a few miles from downtown. Classical, redbrick buildings lined drives and formed quadrangles until the campus covered 137 acres. But as it grew in the 1960s and '70s, bland Modern boxes arose amid seas of parking lots, and strip-style restaurants eroded the edges. An Art Deco library was replaced by a concrete bunker atop a parking structure, designed by the president of the alumni association.

In 1984, John Meunier, head of the School of Architecture, invited Peter Eisenman to program an addition to the College of Design, Art, Architecture, and Planning (below left). When he finished, local architects organized to bar outsiders. But Meunier and the dean, Jay Chatterjee, persisted. Eisenman built the addition, upping the ante for architecture. When Meunier left UC, Chatterjee shepherded the Signature Architecture program, gradually gaining the support of university president Joseph Steger and the trustees. UC alumnus Michael Graves was invited to design the Engineering Research Center, and soon there were buildings by David Childs, Cambridge Seven, Henry Cobb, and Frank Gehry (below right). Then came student facilities by Charles Gwathmey and Gregory Karn, Buzz Yudell, and Mario Violich. Soon there will be Morphosis's Student Recreation Center and Bernard Tschumi's field house. And landscaping interventions by George Hargreaves and Mary Margaret Jones have created a pleasant place for people. *Jayne Merkel*





Dinkeloo and Associates that has become a popular spot.

Complementing better fitness facilities is the new type of campus center, a flexibly programmed space that might include cafés and juice bars, broadband and wireless zones, informal lounges, game rooms, convenience stores, and perhaps even performance areas. Such centers are responding to changing lifestyles, targeting students who grew up hanging out at malls and studying at bookstore cafés. It's a generation, says architect Denise Scott Brown, "that doesn't so much eat as graze." Venturi, Scott Brown & Associates has designed campus centers at Penn, Princeton, and Harvard, all geared to give students casual, lively places to hang out. "Above all, a student center has got to make it more fun to be on campus," she says.

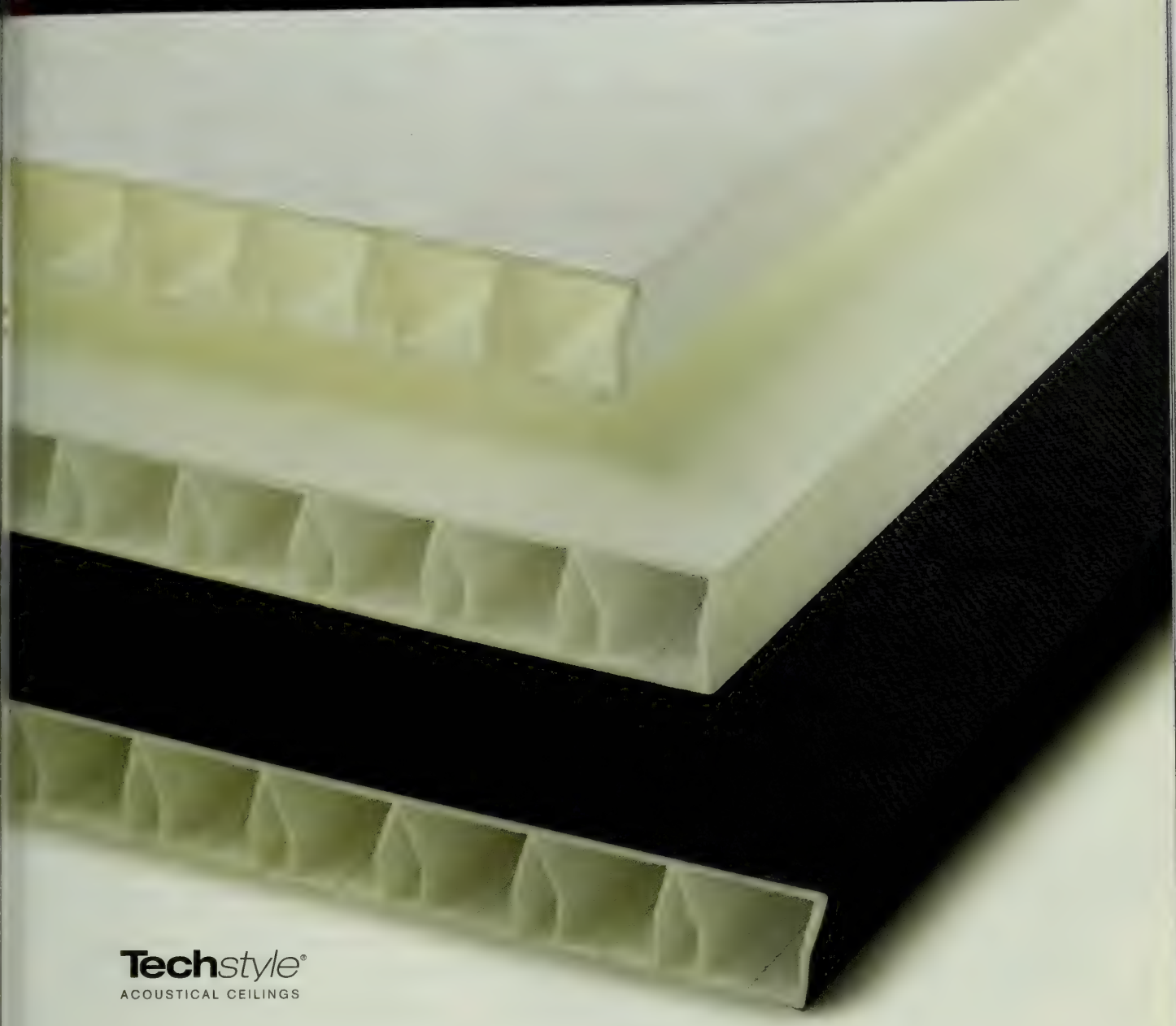
A notable new campus center that certainly takes the idea of fun seriously is the McCormick Tribune Campus Center at the Illinois Institute of Technology (IIT), by the Office for Metropolitan Architecture [RECORD, May 2004, page 123]. With 110,000 square feet of amenities, including a coffee bar, bookstore, auditorium, and game room, the center has already improved the school's sense of community, says IIT architecture dean Donna Robertson. "Students today are very sophisticated consumers, and they demand a lot from their environment," she says. "And it turns out it really does help to be able to get a good cappuccino on campus."

Dorm rooms are replaced by suites loaded with extras

Another trend is increased attention to the residential experience—and the preferred term is *residence*, not *dormitory*. Not even the most competitive schools can ignore the heightened expectations of an affluent generation accustomed to a high degree of personal comfort. Stanford president John L. Hennessey notes, "Students today aren't content with old-style dormitories, with double-loaded corridors lined with tiny rooms, and a bathroom down the hall. They expect more in the way of privacy and personal space."

The current favored model is the apartment-style suite, where half a dozen or so single rooms share a common living room and bathroom. And no matter the configuration of rooms, many schools are focused on expanding residential capacity and quality, again to enhance campus life and recruit students. Simmons Hall at MIT, designed by Steven Holl Architects [RECORD, May 2003, page 204], was a response to a study that observed that while the school excelled in academics and research, it had neglected the extracurricular matter of community. MIT president Charles Vest says Simmons and Zesiger are both part of the institute's efforts to bolster on-campus life. "We came to realize that campus living had become somewhat separate from classroom learning, and that we needed to become a more residential campus, and a more communal one, and that in doing so we could help smooth some of the hard edges of a very rigorous education."

Changes in patterns of learning are also shaping new buildings. Here the key development is the rise of interdisciplinarity, especially in the sciences, and many schools are constructing up-to-the-minute multidisciplinary research laboratories. Don M. Randel, president of the University of Chicago, points out that buildings are crucial in the recruitment of top faculty and students. "Changes in the nature of scientific investigation are driving a lot of development,"



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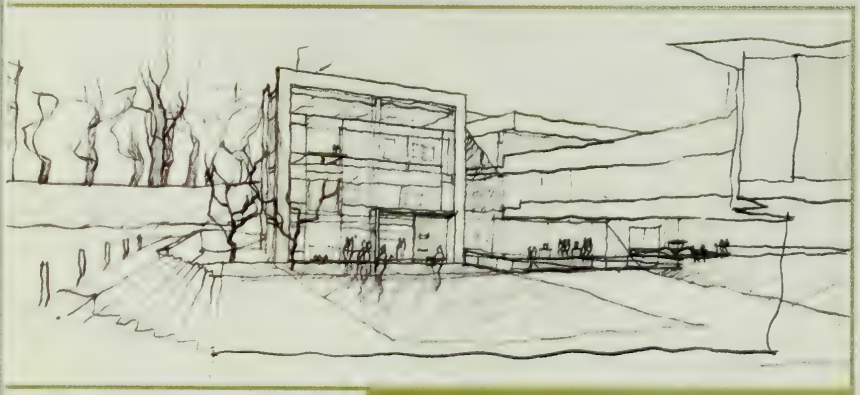
CEILINGS

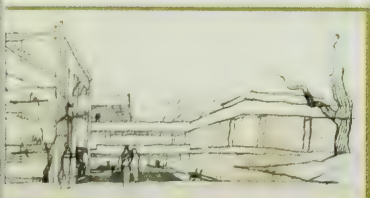
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An 1877 carriage house was adapted by Belmont Freeman Architects as a new Lesbian Gay Bisexual Transgender Center at the University of Pennsylvania (left and above). The facade was restored, with original carriage doors opening to a stone courtyard.





The architecture school at the University of Virginia will expand with an east addition to Campbell Hall designed by faculty member W.G. Clark (above and left). Ruffin Hall (below), designed by Schwartz/Silver Architects, will expand facilities for the studio arts program.



Randel says. "You can't do 21st-century science in 20th-century buildings, let alone in 19th-century ones." Thus, the largest project under construction at Chicago—which has built nine new buildings in the past five years—is a 456,000-square-foot research building designed by Ellenzweig Associates.

The merging of disciplines is increasingly relevant across curricula. "Interdisciplinarity is becoming so important," says Wayne Clough, president of the Georgia Institute of Technology, "that we now conceive of our campus in terms of 'neighborhoods,' of disciplines that need to be near each other. And this is not just for the sciences, but the humanities, too."

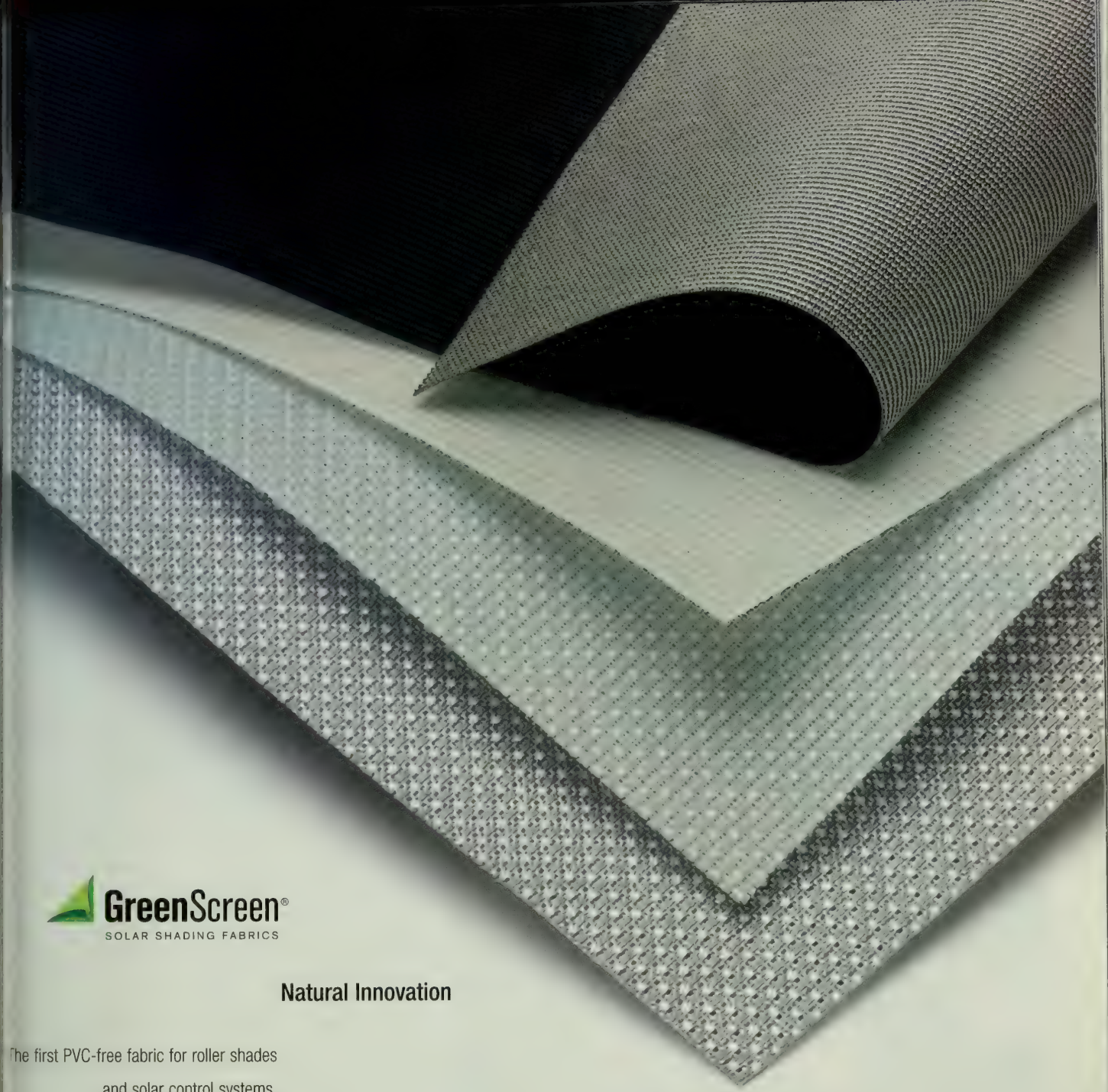
Town-gown concerns spark new synergies

Campuses are clearly changing, and so are the relationships between schools and their metropolitan environs. For years, many urban universities turned inward, making the campus a leafy, cloistered enclave separate from surrounding neighborhoods perceived as unsafe or at least unfriendly. But the model is now shifting emphatically: Schools are no longer gated citadels, but instead catalysts for developments and city building. Many universities have become vital economic engines, sometimes the largest single employer in town. This is the case with Yale and New Haven, Connecticut. "The health of Yale and the health of New Haven are intertwined," says Yale president Richard Levin, who has made improved "town-gown" relationships a priority. "We've been working to make New Haven an asset, not a liability." To that end, the university has become a principal agent of the city's redevelopment, helping to create a special tax district that has attracted many shops and restaurants to the city's downtown, as well as softening the edges of the campus through green space and ground-level retail.

At Georgia Tech, similarly synergistic goals have inspired Technology Square, a multiuse redevelopment of several blocks adjacent to the campus that comprises the School of Management, a research center, an economic development institute, a hotel and conference center, a Barnes & Noble, and restaurants. "We realized that we needed to engage our neighbors in Atlanta," says Clough. "The cloistering strategy wasn't working; it hurt both the school and the city."

Penn, too, has worked systematically to reinvigorate its urban environs. In 1997, it started the West Philadelphia Initiatives, a program intended to encourage public and private reinvestment in the declining neighborhoods around the university; to date, the results include a public school, market-rate housing, a grocery store, a movie theater, a book store, and assorted small shops and restaurants.

Columbia University has been looking hard at its relationship with Manhattan. The school recently announced plans to develop a new campus district north of its Morningside Heights campus. According to Columbia president Lee Bollinger, the new campus will be planned in collaboration with the community and the city, and reflects a different paradigm than that of McKim, Mead and White's Beaux Arts plan. "Morningside is a great academic space," says Bollinger, "but it would be inconceivable to try to replicate it—to make a place of stone and brick, of gates and walls. The new campus must reflect today's closer relationship of the university with the city." Renzo Piano, part of the team studying the site, says, "A century ago, the Columbia campus told a story



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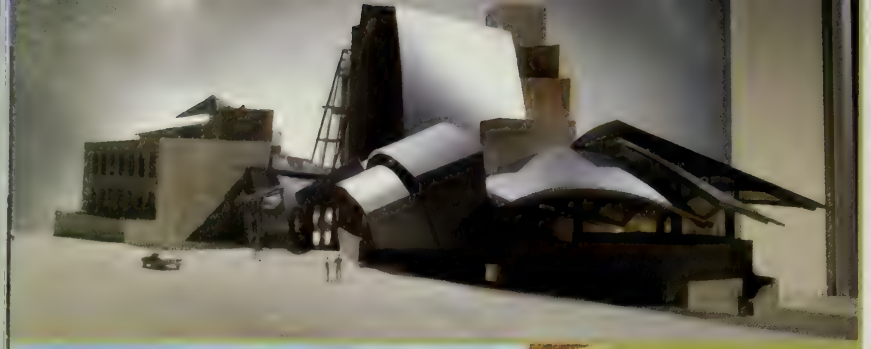
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At Princeton, a debate over architectural styles persists. Frank Gehry's bold forms for a new science library (above) stand in sharp contrast to a Gothic Revival residence designed by Demetri Porphyrios (left).



A campus in Savannah supports citywide renewal

The Savannah College of Art and Design, founded in 1978, has never had a typical campus. Instead, it has bought and renovated buildings around the city, creating a network of more than 50 school buildings. Motels have been converted to dorms, an old movie theater was rehabilitated, and factory buildings were adapted as studios for artists. "Savannah never experienced urban renewal, so we found many buildings, sometimes in bad shape but with good bones, that were well-suited to adaptive reuse," says SCAD president Paula Wallace. "In this way, we have become a big force in city development." *N.L.*

about monumentality, about lofty dignity. Today the school has a different story to tell, about participation in the city, about an architectural language of transparency and permeability."

Architectural styles are still debated on campus

Architecture does tell a story, and the nature of its expression is a perennial theme on campus. The discussion presents an intriguing contradiction: Universities are dedicated to the advancement of knowledge, and yet they often build conservatively, embracing revivalist styles. The very term "Collegiate Gothic" evokes the quintessential image of the American campus: an archaic-looking stone structure set in a serene place. The tension between tradition and innovation persists, sometimes on the same campus. Princeton, for example, is building both a Gothic Revival residential college designed by Demetri Porphyrios and a new science library by Frank Gehry.

At some schools the debate between past and present is inevitable. Thomas Jefferson's extraordinary campus for the University of Virginia can be intimidating to those who would build upon it, but it can also inspire. UVA dean of architecture Karen Van Lengen says, "To focus on precise stylistic replication is rarely successful. The usual results are what might be called 'Jefferson wallpaper.' What should be carried forward are the principles of the campus design." She cites planned additions to the architecture school, by faculty members W.G. Clark and William Sherman, as projects that respect principles while working in a contemporary idiom.

Some schools are freer to use contemporary architecture to signal their institutional ambitions. In the past decade, the University of Cincinnati has transformed itself from a commuter college with a surface parking lot smack in the middle of campus to a major research university, and signature architecture has been central to its renaissance. "When I got here in the early '80s, the place was shabby," says president emeritus Joseph Steger. "There was no 'wow!' to the campus." Under Steger's leadership, the school became a patron of contemporary design, commissioning a landscape plan by Hargreaves Associates and buildings by, among others, Michael Graves, Frank Gehry, and Peter Eisenman, whose Aronoff Center attracted widespread attention, even notoriety, which was exactly the point. "We wanted to wake up this town to the value of architecture," Steger says.

"Contemporary architecture can be a hard sell, but I'd rather commission a building that provokes argument than one that nobody notices," says Chicago's Randel. "Universities are now the major patrons of architecture, and this suggests a responsibility to seek leading-edge architecture."

As institutions that endure and build for the long term, colleges and universities are well suited to the role of architectural patron. The past decade has seen extraordinary activity in campus development, and the coming years will likely see more with emerging trends gaining strength. Green design is attracting increasing attention, for reasons both ethical and economic. And, as UVA's Neuman suggests, the preservation of Modernist structures will become an unavoidable issue on many campuses. "All those postwar buildings constructed during the last big campus extension are going to need extensive renovation," he says. "This is a sleeping giant for facilities departments across the country." ■



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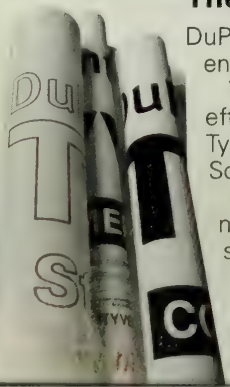


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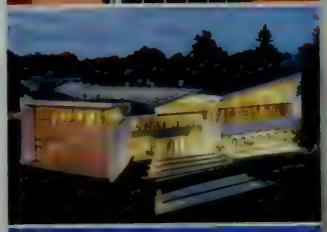
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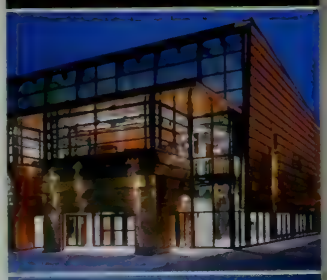
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Facing the Future

On campus, architecture transforms student life and learning











(From top): Stata Center, MIT; Smith College Student Center; Academic Resource Centre, University of Toronto Scarborough; Sharp Center, Ontario College of Art and Design; CCA Graduate Center, California College of the Arts.

PHOTOGRAPHY: © (FROM TOP) ROLAND HALBE; JEFF GOLDBERG/ESTO; RICHARD JOHNSON/INTERIOR IMAGES; STEVEN EVANS; RICHARD BARNES

By James S. Russell, AIA

By putting the Ontario College of Art and Design's Sharp Center on stilts (page 124), is Will Alsop making some kind of joke about higher education? It's no shrinking violet, that's for sure, but sticking what is essentially a loft for art students up in the air is just one of the many ways colleges and universities are redefining their mission using architecture. We devoted this month's project pages to these institutions because they are using design talent in such extraordinary ways. (We'll be looking again at college buildings in a December Building Types Study.) Campus construction has often been deemed little more than a headache, costing too much and seemingly distracting staff from their real job of educating students. As Nancy Levinson reports (page 86), university leaders nationwide see little choice but to embark on sweeping renovation or expansion plans, though many now recognize opportunities to use architecture to transform student life or to house cross-disciplinary team-based research. Research is a high-stakes endeavor, which is why MIT sanctioned so rich and detailed a collaboration between Gehry Partners and the faculty of the Stata Center (page 98). Those stakes include retaining valued faculty, attracting the best students, and speeding the delivery of discoveries. MIT is hardly alone.

Whether the modern student needs more help finding friends and colleagues, or whether the competitive pressures of university life place too much strain on students' health—take your choice—higher-ed institutions everywhere are responding by building inviting student centers, like the curving, covered street Weiss/Manfredi created for Smith College (page 112). Architects for small colleges and cash-strapped state institutions also deliver high-amenity facilities on skinnier budgets. In Toronto, Brian MacKay-Lyons designed a light, airy Academic Resource Centre (page 120) using a straightforward volume in resilient yet modest materials. Jensen & Macy show how to build a suave yet adaptable arts work space (page 128) on a budget of almost nothing at all. ■

A San Gimignano for science, **Gehry Partners'** **STATA CENTER** nurtures a research culture ready to cross the fast-dissolving boundaries of knowledge



Two C-shaped towers focus glassy lounge spaces on a terrace dotted with colorful sculptural meeting places (below). The dance of forms enlivens once-shabby Vassar Street (right). Folded canopies denote entry to the internal Student Street.







GEHRY'S FOREST OF SHAPES IN PERPETUAL "DEBATE" COU






THE PERFECT METAPHOR FOR RESEARCH TODAY.

By James S. Russell, AIA

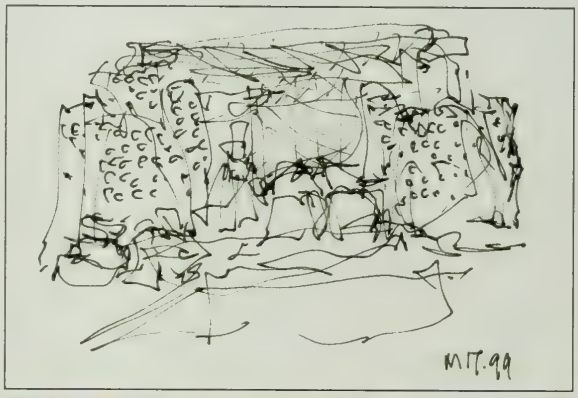
When word got out that Frank Gehry was proposing to model the 720,000-square-foot Stata Center at MIT on an orangutan village, there were those who thought the architect had finally lost it. A primate palace as the crown jewel of the campus's $1 billion building program? Imagine the teeth-grinding in high places.

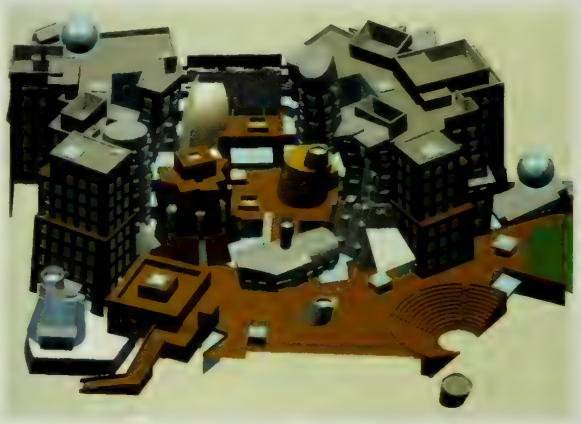
Orangutan life *was* discussed, but in the context of creating what is arguably the most sociologically complex building erected on a campus in recent years. Along a dreary stretch of once-industrial Vassar Street, Gehry has conjured yet another eye-popping assemblage of curvy silos and angled towers exposing a bit of columnar leg ("there's a lot of Fred and Ginger in it," Gehry noted in an interview, referring to a famous project in Prague). Alluring as the exterior is, the story of this building is inside, where its Piranesian spatial intricacy aspires to let research leap old boundaries.

The building started out as a way to bring together several related programs in the computer sciences. It evolved, according to MIT provost Robert Brown (who joined the project when he was dean of the school of engineering), because the researchers wanted more openness, community, and easier ways to collaborate. Everyone's heard this before: Making idea sharing possible is part of the program of virtually every research building. At MIT, this desire got elevated to an obsession. Why?

Two trends drove this $300 million commitment by MIT, according to William Mitchell, who was involved very early as dean of the architecture school and now runs its legendary Media Lab. "Most significant research gets done by research groups and research teams; its very much a social process," he said, noting, "a huge amount of what's important happens where fields intersect and cross over." Scientists have had to declare ivory-tower solitude all but dead, he explained. Competition for grants, students, and discoveries requires researchers to draw together fields that 10 years ago would have seemed to have nothing in common.

The focus on easy interaction and collaboration emerged early in the programming process, but deciding how these goals would be realized took years to figure out. "These guys are iconoclasts," said Gehry. "They hide out in their offices. They're loners and don't want to talk to each other. But they're also ambivalent. They *want* to talk to each other." It was one of the most in-depth—and contentious—program processes the firm was ever involved in, according to Craig Webb, the project designer at Gehry Partners.





The hivelike intricacy of the design opens up offices, lounges, and labs to view. There's always the possibility of finding the person who has the answer to the question you have not yet thought to ask.

Put their heads in a new place

"I predicted that people would tell us what they wanted without realizing that what they described was what they already had," said Gehry. That's exactly what happened, and it seemed to create an impasse. To "put their heads in a different place," explained Webb, the firm made models using analogies drawn from other cultures to illustrate possible social models of research. Shoji screens in a "Japanese house" suggested malleable realms of public and private, but Gehry notes, "they hated that." A Colonial mansion fixed public areas below private offices. "It raised the issues of privacy versus flexibility and proximity to the workplace," explained Webb. "They hated that, too," said Gehry. Rachel Allen, a staffer in Gehry's office, came up with the idea of using examples from animal communities. One model featured an architectural prairie-dog town. With private spaces below, "you would 'pop your head up' to see what others are doing in the communal space," explained Webb.

Then came the orangutans. Since family groups spend their days together on the ground but sleep in separate nests in trees, the firm made a model that placed spaces for quiet, private work a level above areas for meeting, relaxing, and conversation. They hated that, too, said Gehry. "They thought we were calling them orang-utans. But it started the conversation, and made what we've built possible."

Out of these intense discussions came a building that makes, as Mitchell calls it, "a broth of people to enable new intersections of thought and ideas to happen." The most public realm is the ground-floor Student Street. According to Provost Brown, the university "needed a space that was open and accessible to the whole MIT community." A report commissioned by the institute had underlined an imperative to make student life more amenable, not just to attract the best (though this was certainly an important reason), but because students have too often found high-pressure technology environments socially isolating, and too many suffered for it—a few even taking their own lives.

So MIT added to the academic program a fitness center, day-care center, classrooms, and food service to the street. Festooned with intertwining overhead stairways and shapes from the floors above plunging through the ceiling, it urges students to slow down by offering eddies of space fitted out with benches, computer terminals, and blackboards.

As John Guttag, head of the department of electrical engineer-

Project: *The Ray and Maria Stata Center for Computer, Information, and Intelligence Sciences, Cambridge, Mass.*
Owner: *Massachusetts Institute of Technology*
Architect: *Gehry Partners—Frank Gehry, Jim Glymph, Craig Webb, Marc Salette, Rachel Allen, Larry Tighe, David Rodriguez*
Associate architect: *Cannon Design*
Engineers: *John A. Martin & Associates, Martin/Martin & ABS, CBI Consulting (structural); Vanderweil Engineers (m/e/p)*
Construction manager: *Beacon Skanska*



The towerlike forms of the building fold in on themselves, offering views through skylights to labs below or to people relaxing on the south-facing terrace.





The virtual building: a model of efficiency, to a point

"We took the digital files from the designers, and 12,000 man-hours later, we had ourselves some shop drawings!" said Tony Micielli, a project manager at CAPCO Steel of Providence, Rhode Island, at the Stata Center's opening in May. His comment drew laughter from a crowd who packed the center's auditorium to hear the project's team members discuss how the building's digital model was used during design and construction.

Building Gehry's work has always necessitated a combination of technical prowess and close relationships with contractors and fabricators that's still uncommon in architecture today. The Stata Center was no exception, especially given the aspirations of a client like MIT. Project principal Marc Salette of Gehry Partners explained the process: Physical models were digitized, refined in Rhino software, then imported into CATIA for engineering and fabrication. The CATIA model was subdivided by building element (e.g., the upper-floor towers) and then segmented, loosely, by "trade" (exterior skin and windows, concrete and steel structure, pattern for metal skin elements, and framing for support of the surface panels).

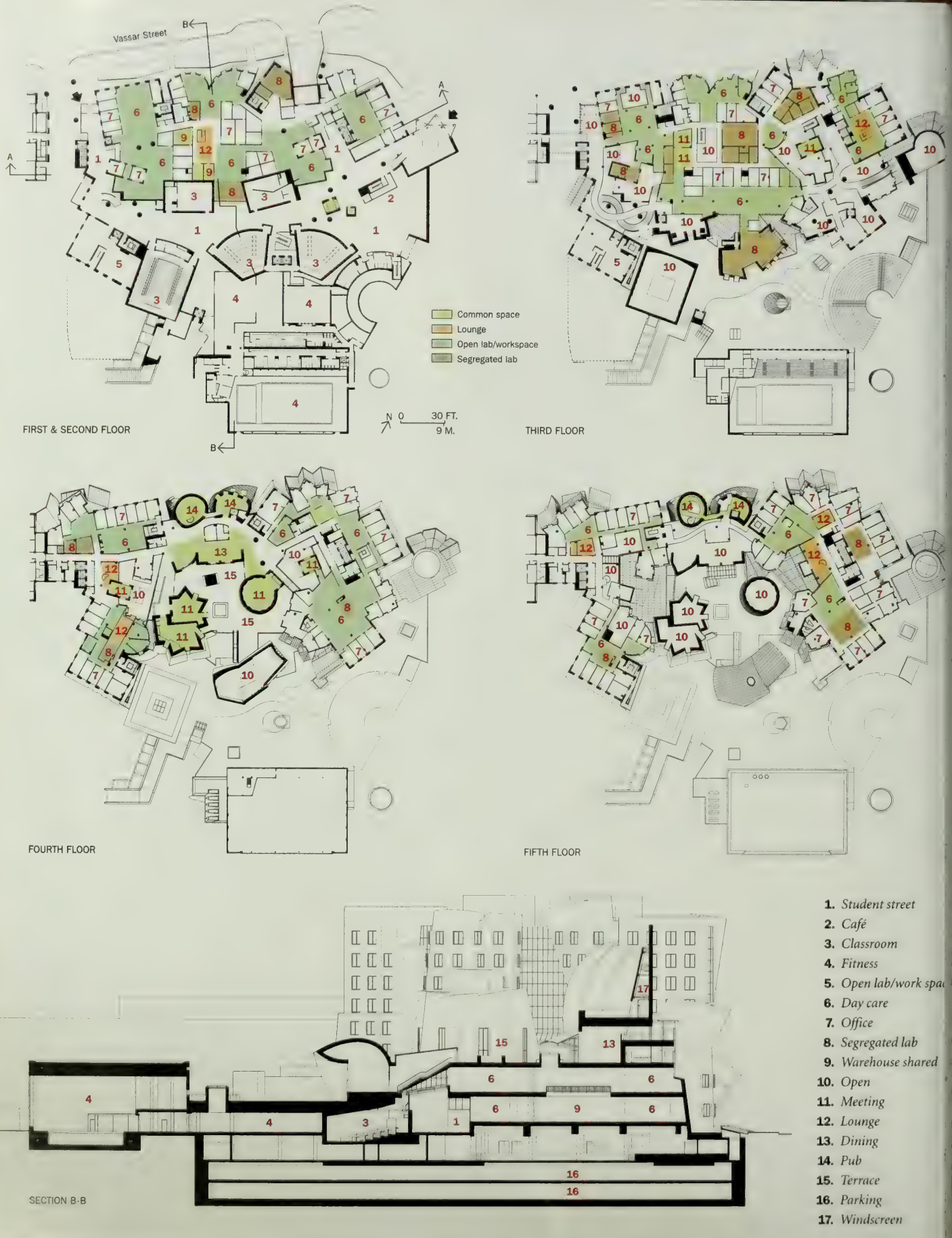
Team members used the model segments for various purposes. Engineers John A. Martin & Associates analyzed the building's structural stability and derived horizontal and vertical control information for construction. Consultants imported model data into specialized programs for analyses of daylighting, acoustics, and computational fluid dynamics for sizing the HVAC system. Curvature studies of the towers and other features allowed engineers to design their components from primarily flat, straight surfaces and members, which are easier to make than curved ones. Mock-ups and full-scale production of glazing components and the facade's metal panels were manufactured from the CATIA files.

Not that the model was always ready for plug-and-play. Micielli's comments, echoed by others, pointed up the struggles in producing detailed shop drawings from the structure and framing models. He sees potential, though, for using the models to estimate steel tonnage and cost during bids. And the team emphasized the human element of the process. "We wanted to do whatever it took to be the most efficient—not necessarily the most technologically advanced," said Paul Hewins, the project executive from general contractor Skanska. "It took a lot of coordination to figure out when model information was needed, versus when it was in the way."

Now that the dust has settled on Vassar Street, what will come of the models? "That's an excellent question," said MIT's Chris Terman, a faculty representative to the project. "One day, Skanska could unplug their servers and we'd all be in trouble." MIT would like to continue amending the models as the building evolves, but the time and expense of upkeep aren't part of the project's scope. Though the models may not see life after occupancy, the Gehry team deserves credit for inching toward that elusive goal, one megabyte at a time. *Deborah Snoonian, P.E.*



Skylights that poke through the fourth floor (opposite, right) spread daylight into the Warehouse-level labs (this page). Conference rooms (bright painted tower, opposite, left), offices, corridors, and stairs look in on the action.

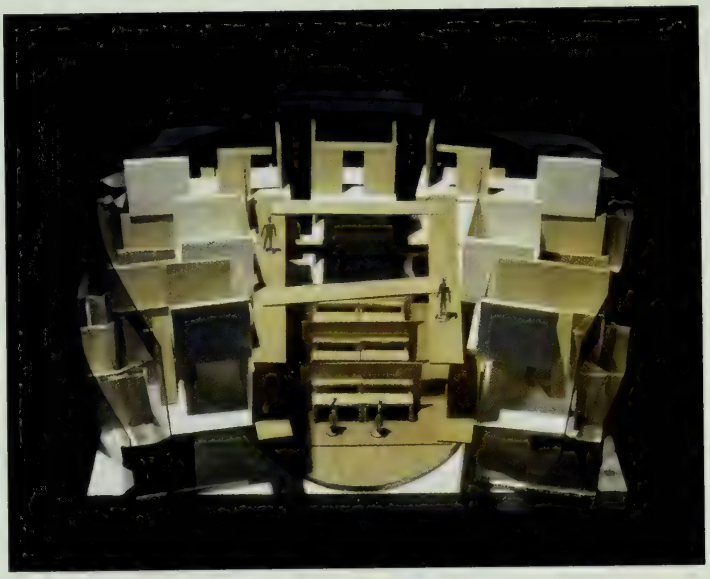

Vassar Street
B
A
Common space
Lounge
Open lab/workspace
Segregated lab
N 0 30 FT. 9 M.
FIRST & SECOND FLOOR
THIRD FLOOR
FOURTH FLOOR
FIFTH FLOOR
SECTION B-B
1. Student street
2. Café
3. Classroom
4. Fitness
5. Open lab/work spac
6. Day care
7. Office
8. Segregated lab
9. Warehouse shared
10. Open
11. Meeting
12. Lounge
13. Dining
14. Pub
15. Terrace
16. Parking
17. Windscreen



SIXTH FLOOR

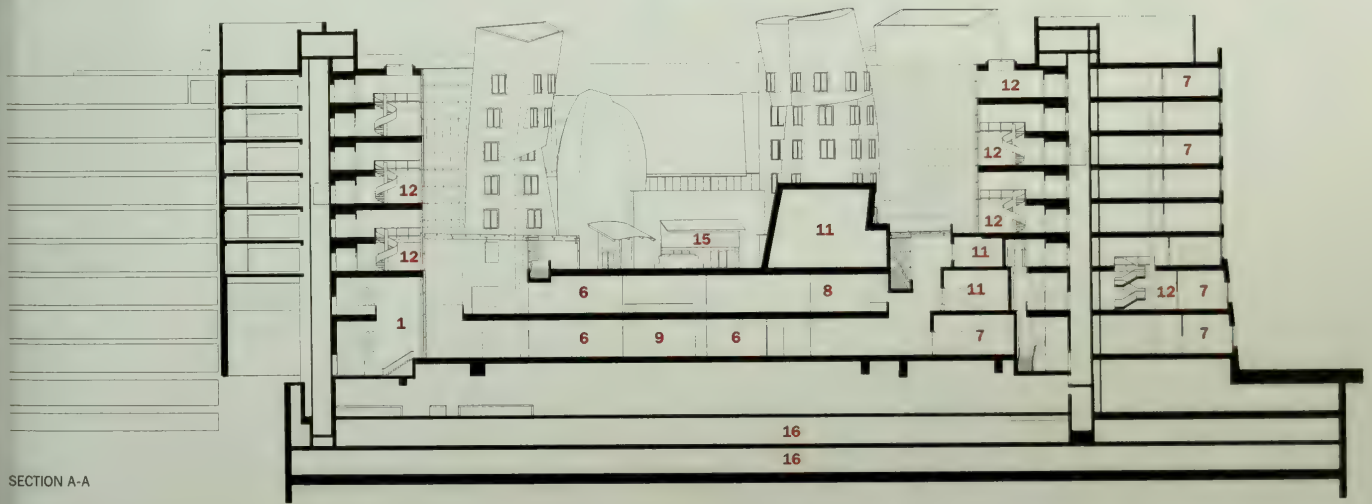


NINTH FLOOR





The intricately choreographed gradations between private and shared space (drawings, left) could not have come about without color-coded models (above), which helped researchers understand possible social arrangements. Lounges that look down through skylights to lower-level labs were studied in models (left).



SECTION A-A





ing and computer science, explained, "One of the things it took us a while to understand is that there were layers of community. Faculty members had their students, and worked with slightly larger groups of faculty and their students. So the idea of a neighborhood emerged, where the people you expected to see every day would be."

Labs open to the light

What's called the Warehouse, which stretches over more than 40,000 square feet on both the second and third floors, is separated from the Student Street by vestibules (see plans, pages 106–107), so that, says Guttag, "this community of researchers is able to circulate freely." Within it, the building cracks itself open: Private offices and open work spaces surround two large laboratory spaces at the east and west ends, which rise to enormous sloping skylights framed over the fourth floor. "They needed these high-bay areas for heavy equipment, for graphics, visualization, and robotics," said Webb. (Some labs are fully segregated.)

A similar but finer-grained gradation of privacy occurs in the two towers that rise from the fifth floor upward. They both curve in a C-shape to focus the action on double-height lounges, each with its own spiral connecting stair, that serve the neighborhoods of researchers. The towers and the warehouse come together at the fourth-floor faculty dining space and pub, which spill onto a piazzalike outdoor terrace. Seminar rooms that might have been placed within departments were consciously grouped on this floor, poking through the terrace in a riot of brick, yellow-painted metal, and polished steel. Everyone mixes while they're getting their cookies between presentations, explained Guttag.

Real, not virtual community

The spatial intricacy and labyrinthine circulation bear no resemblance to the typical rectangular research structure—rigidly modular and zoned by mechanical services. The specificity of the Stata Center's form serves the collaborative and interactive agenda generally, rather than wrapping itself around specific functions. The dead ends and eddies of space are ideal for a quick sit-down, noted Guttag. One of the reasons the building became so large (420,000 square feet on top of a 300,0000-square-foot garage) is that so many research groups wanted to be near each other. "The lab groups in computer science wanted to be near the groups in the Artificial Intelligence Laboratory," said Webb. "They all wanted to be on the other's boundaries. Finally, they decided they didn't need the boundaries. So the two groups combined in the middle of design." (The interdepartmental facility is called the Computer Science and Artificial Intelligence Laboratory, or CSAIL.)

WHY SO MANY PLACES TO GATHER? "LOUNGES ARE WORKPLACES; SOCIAL EVENTS ARE TECHNICAL DISCUSSIONS."



"Web technology connects in lots of ways and on lots of levels," says Tim Berners-Lee, a pioneer of the Internet. He saw an analogy in the way "the circulation stairs that appear here and there make networks," like the stair winding over the Student Street (opposite, left). Research "neighborhoods" share lounges (opposite, right), which look into and through offices and labs (this page).



You would think that this obsession with proximity wouldn't matter anymore. After all, the building is chock full of people who have invented many of the technologies that are supposed to keep us connected without the inconveniences of personal contact. So where are the a gee-whiz interactive gizmos, the virtual communities? "They believe that the old-fashioned ways are the right ways," explained Alec Marantz, a linguistics professor and the head of the school of humanities and social sciences, "including face-to-face and casual, spontaneous interactions that involve places where you can talk together and write on something."

Whether the devotion of such a variety of spaces to collaboration will pay off is the long-term question. "We didn't measure efficiency in dollars per square foot," explained Guttag. "Lounges are workplaces. Social meetings are technical discussions. That's why we wanted a lot of gathering spaces. Though it's hard to measure, we think it's efficient." ■

Sources

Brick: *Grande*

Metal cladding: *Zahner/Karas*

Skylights, curtain wall: *Zahner/Karas*

Roofing: *Zahner/Karas (metal); Sarnafil (PVC); Grace (elastomeric)*

Wood doors, woodworking: *North American Woodworking*

Ceilings: *Baswophon; Ecophon*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

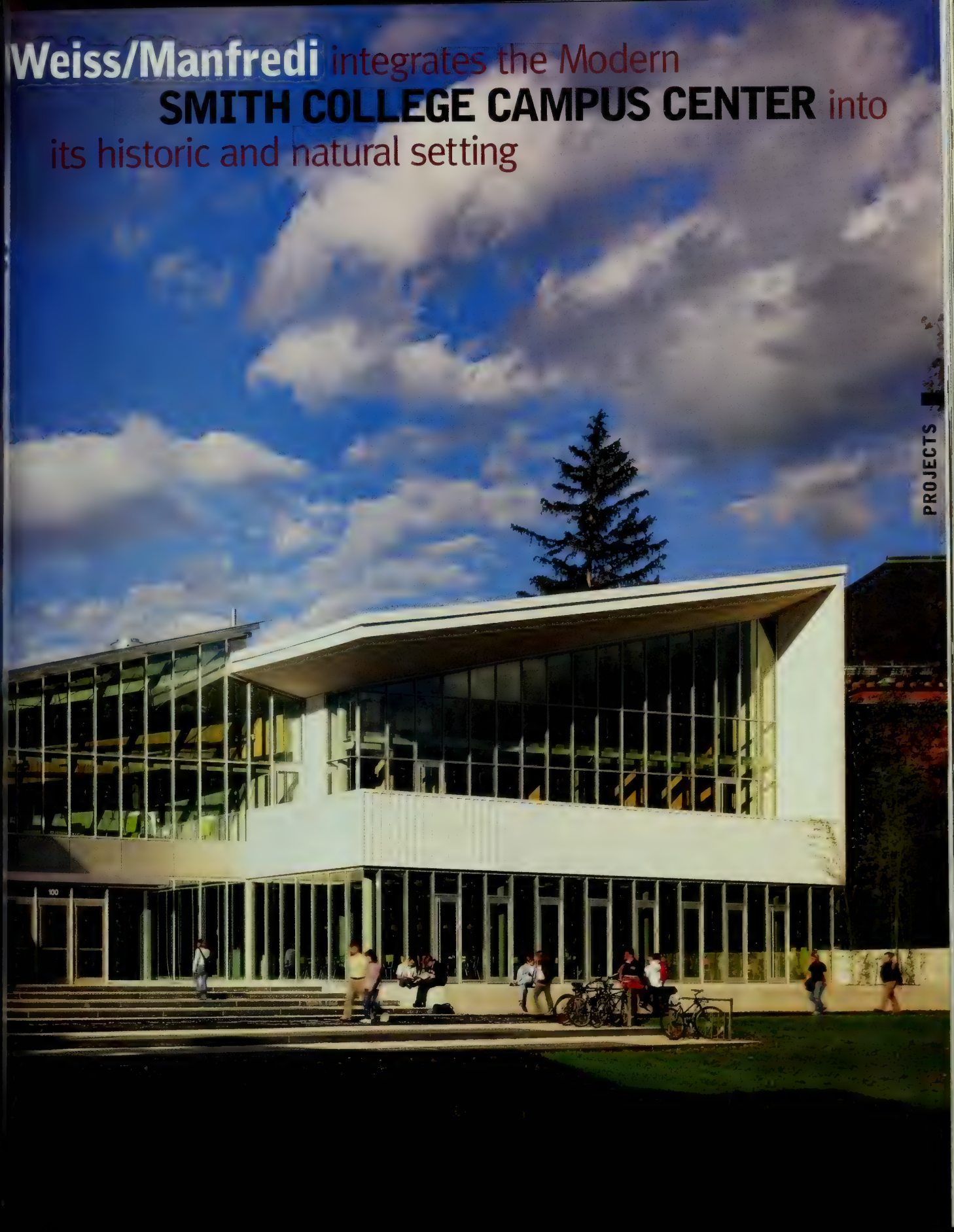


The Student Street (this page and opposite) offers a shortcut from busy Main Street (entrance, opposite, bottom) to Vassar. Unlike MIT's famous "endless corridor," what John Guttag calls "a conduit, down which you are impelled to move," Student Street is enlivened with activities and places to stop and talk.



The south end of the building faces a new oval lawn designed by Weiss/Manfredi. The architects connected the building to its surroundings by extending the front steps into the lawn and creating a dining terrace (right in photo) and a louvered porch (left in photo).

Weiss/Manfredi integrates the Modern SMITH COLLEGE CAMPUS CENTER into its historic and natural setting





The building presents a bright, open face to the campus (above), but is more residential on Elm Street (bottom).



TE PLAN



By Clifford A. Pearson

Marion Weiss and Michael Manfredi use the word "porous" to describe the 57,000-square-foot campus center they designed for Smith College in Northampton, Massachusetts. Under their direction, light, space, and movement leak in and out of this building, which acts as a social hub for the college. Instead of boundaries, they created permeable membranes between indoors and out, campus and town, work and play. Their design makes connections between architecture and landscape, students and faculty, old and new. While many people from the town and the college initially resisted the notion of a Modern building on the redbrick and white-clapboard campus, since its opening in August 2003, the new structure has proved to be a welcome common ground for the academic community and its neighbors.

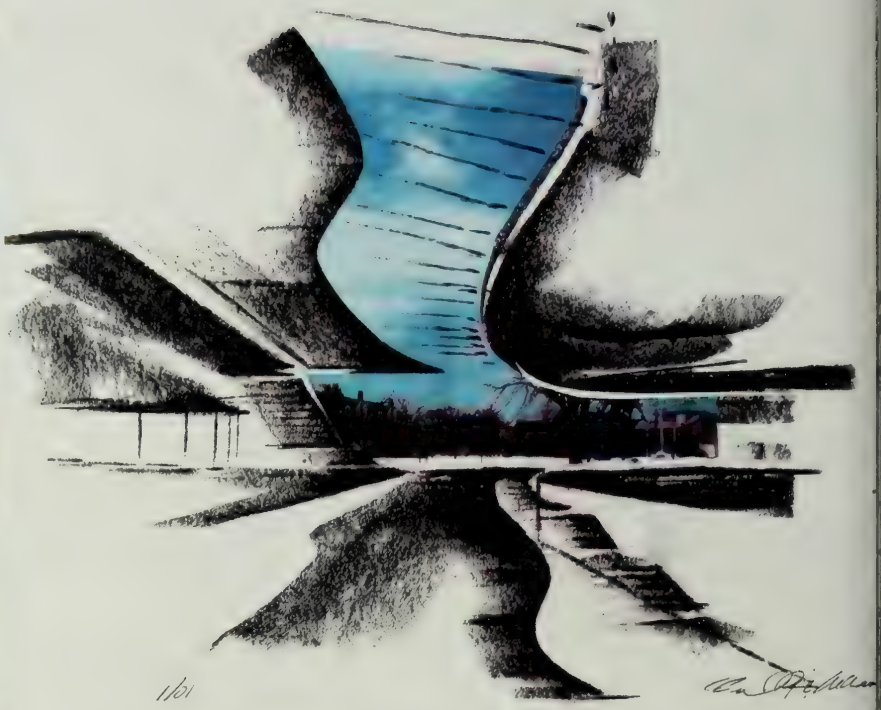
Like the firm's Museum of the Earth, in Ithaca, New York [RECORD, January 2004, page 112], the $23 million Smith College Campus Center both responds to its context and reshapes its site. In Ithaca, Weiss/Manfredi carved the museum into its rocky setting to express the geological nature of its collections. In Northampton, the architects designed a building that stitches together a frayed campus edge, offering a dynamic passage between town and gown. "We think Smith very much captures what theorist David Leatherbarrow observed about our work," say the architects, "that architectural sites are not given but made. And once made, they guide the development of spatiality and construction."

Project: *Smith College Campus Center, Northampton, Mass.*
Architect: *Weiss/Manfredi Architects—Marion Weiss, Michael Manfredi, partners; Tae-Young Yoon, project manager; Armando Petruccelli, Kok Kian Goh, Lauren Crahan, Stephanie Maignan, Jason Ro, Chris Payne, Michael Blasberg, project team*
Engineers: *Weidlinger (structural); Fuss & O'Neill (civil); Jaros, Baum, and Bolles (m/e/p)*
Landscape architect: *Towers/Golde*
Construction manager: *Daniel O'Connel's Sons*



Twenty-foot-high metal-and-wood louvers help protect the west-facing porch off the main lounge (at left on this page and opposite, top left). The building's location at the center of campus (site plan, opposite) is key to its success as a gathering place.

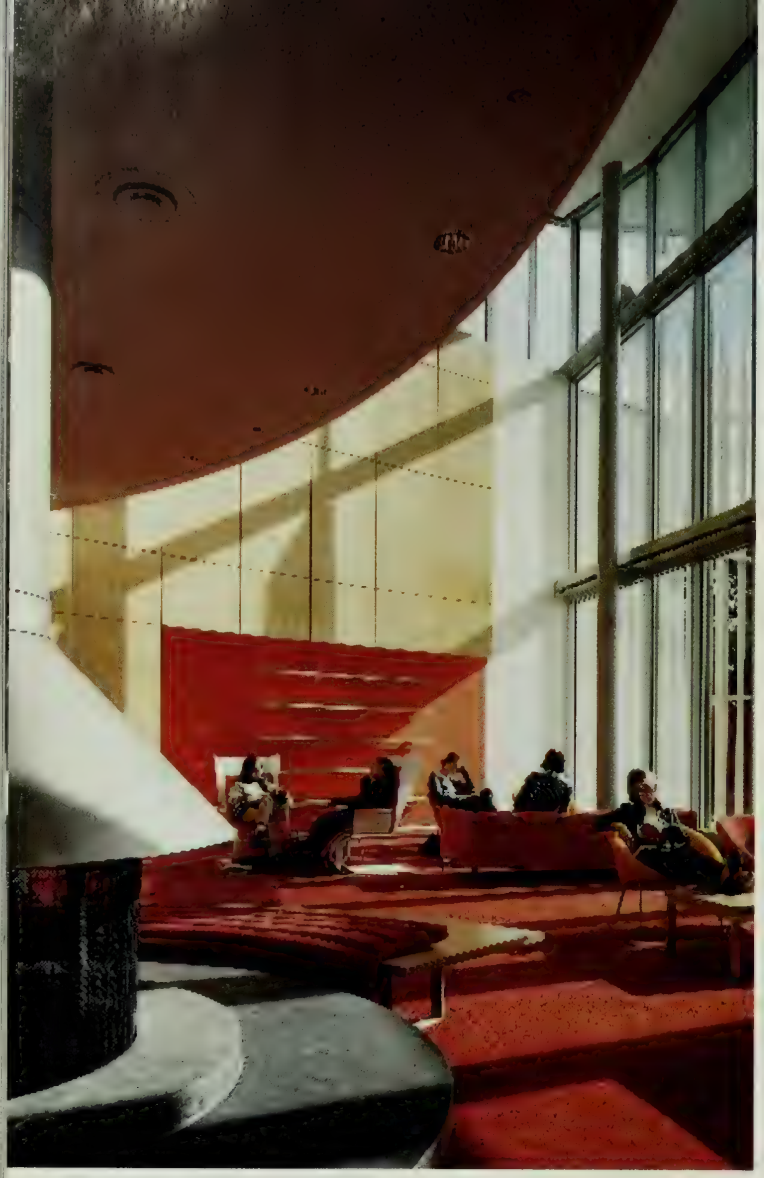




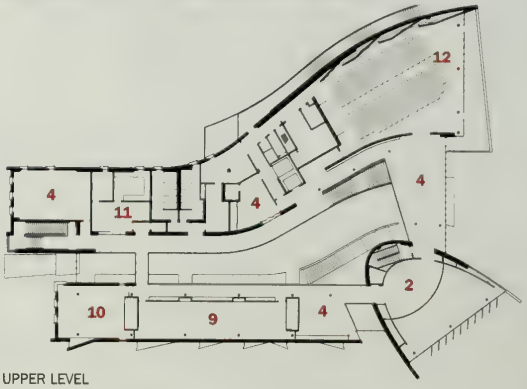


In addition to bringing daylight from above, Weiss/Manfredi enlivened the winding atrium (left and top) with splashes of rich color on walls and furnishings. The architects designed the colorful resin tables in the atrium (second level in photo opposite), square versions in the cafeteria, and folded aluminum wingback chairs (not shown).





Many of the building's most important rooms have outdoor spaces, including the two-story main lounge (left), the cafeteria (bottom), and the lounge area on the lower level (opposite). Visual connections within the building and to the outdoors are key elements of the design.



UPPER LEVEL

1. *Atrium*
2. *Main lounge*
3. *Meeting/lounge*
4. *Lounge*
5. *Office/lounge*
6. *Office*
7. *Cafeteria*
8. *Servery*
9. *Work space*
10. *Conference*
11. *Student organizations*
12. *Multipurpose*



MAIN LEVEL



In the past, social life at Smith centered around its 44 residentia houses. But Ruth Simmons, president of the college from 1995 to 2000 saw the need for a gathering place for the entire school. As Weiss and Manfredi worked to get the right mix of uses, they also set about repairing damage done over the years to Frederick Law Olmsted's master plan of the campus. They created a grassy oval that helps pull together an ad hoc cluster of existing buildings and oriented the new campus center to this Olmstedian feature. But a power substation next door pushed the new building onto a narrow piece of land and squeezed its architectural form When the client team expressed reservations about the initial scheme Simmons said, "Let's relax the constraints, relax the budget, relax the setbacks from the substation," recalls Weiss. "It was a remarkable display of leadership." The architects developed a new design using a steel-and-concrete blast wall that allowed the building to get closer to the substation and expand in size and form. Both the client and the architects liked the new design much more, and Simmons—who subsequently became the president of Brown University—found the extra money to pay for it.

"We wanted a building that's full of light even during the winter," says Maureen Mahoney, dean of the college and the person at Smith in



charge of the campus center project. "And we needed a truly public space because the [residential] houses are just for the students who live there."

Weiss and Manfredi translated these requests into a winding, two-story-high atrium topped by a cable-stayed skylight that curves in two directions and expands in width from 12 feet at the north (facing the town's historic Elm Street) to 37 feet at the south (where it opens onto the college's new oval). To reduce the building's apparent mass, the architects pushed a floor with mailboxes, a store, and lounges below grade, but kept it daylight-filled by carving away the earth along its west edge. Weaving the building into the landscape, they incorporated a variety of terraces—in the space scooped out along the western facade, under the eaves just beyond the cafeteria, and on a porch in front of the main lounge.

To emphasize its social function, the architects designed the center's sinuous atrium as a covered street connecting college to town and providing a place where people would meet by accident or design. "The first model we built was a three-dimensional map of routes through the site," recalls Manfredi. "Our idea was to create a building that would slow people down and give them a place to pause and meet." Lounges, offices for student organizations, a sun-filled cafeteria, and a large multipurpose room (equipped to handle lectures and performances) stretch out on either side of the atrium. The lounges offer a range of active and quiet spaces, reflecting what Weiss calls a blurring of study and play among students today.

The architects wrapped the steel-frame structure with a double membrane of wood panels and battens, stained a warm white that matches Congregationalist churches in the area. When the local historical commission questioned the idea of a contemporary building, the architects pointed to old glass-and-metal greenhouses on campus, then showed images of their Women's Memorial at Arlington National Cemetery, which incorporates a Neoclassical hemicycle into a Modern addition using similar materials. "Much of our work is about reconciling the division of new and old," explains Weiss. At Smith, Weiss/Manfredi has collapsed time in a crystalline structure that wiggles gracefully on the border of past, present, and future. ■

Sources

Curtain wall: *Kawneer/Viracon*

Skylight: *Custom by MAI/Architectural Skylight*

EPDM roofing: *Carlyle*

Café tables: *Weiss/Manfredi Architects*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

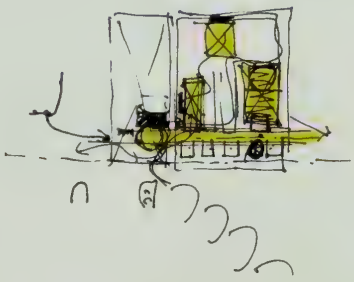


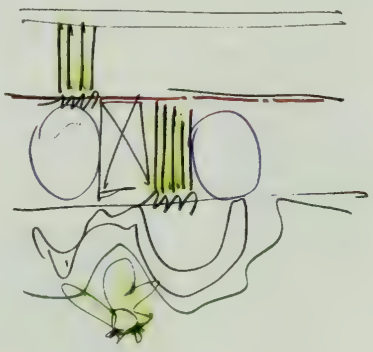
MacKay-Lyons began with sketches for the building volumes (opposite, top) and the master plan (opposite, bottom). Five modular projections (right and below) mark the entrance facade. Copper clads the exterior walls, including the east elevation (left) of the auditorium, and distinguishes the new structure from the 1971 addition to the west.





Brian MacKay-Lyons Architect's rationalist ACADEMIC RESOURCE CENTRE contrasts elegantly with a 1960s University of Toronto campus





By Terri Whitehead

Brian Mackay-Lyons's new Academic Resource Centre (ARC) at the University of Toronto's Scarborough campus is a functional and elegant addition sympathetic to John Andrews's celebrated building, which opened on the site in 1966. The large, linear, concrete megastructure, a heroically striking Brutalist form, still snakes across the landscape. Andrews, an Australian architect, intended this structure to be part of a nonrectilinear plan that could be easily expanded. However, his original scheme was never completed. Financial constraints prevented the campus from fulfilling its potential, and many of the key features, including a central library and arts wing, remained unfinished.

In recent years, the campus has outgrown its postwar incarnation as a small, nonresidential suburban college and has begun to flourish as an independent branch of the University of Toronto. With new government "Superbuild" funding, the school has received $150 million to enlarge and enhance the campus and is doing so with several major projects by an assortment of architectural firms. Brian MacKay-Lyons, a Halifax-based architect known for his cleanly articulated Faculty of Computer Science building at Dalhousie University in Halifax [RECORD, February 2001, page 102], convinced Scarborough that the new ARC building should be distinctly different from the powerful Andrews one. He developed a scheme in which the structure, which was to house the intellectual heart of the campus—the central library and resource center, a new lecture theater, and a small art gallery—would resemble a well-articulated industrial shed.

MacKay-Lyons, in a close collaboration with the Toronto firm of Rounthwaite, Dick & Hadley Architects, consulted with various groups to generate a flexible design that responded to the current requirement of the users while anticipating future needs. Designed on a rigid structural grid with a poured-in-place concrete frame, ARC reflects a clarity and articulation of expression typical of much of MacKay-Lyons's work. His fascination with function as well as industrial, vernacular, and shipbuilding techniques is much in evidence in this building's materials and formal solution. He organized the various programmatic elements for studying, writing, and meeting in a series of 25-foot-wide structural bays forming "boats" within the overall grid. Mackay-Lyons credits the plan and the limited palette of materials for being able to bring the project in at $13.8 million (Canadian), below the budget of $15.1 million. The most striking feature of the ARC is the standing-seam copper cladding, which wraps the structure's elevations and folds to cover the roof of the lecture theater. Chosen for its strong, warm color, copper should weather beautifully in the harsh Ontario climate. Inside, the exposed-concrete block used as infill walls recalls the rougher look of the adjoining Andrews building.

However, the interior benefits from the strategically placed cherry plywood tables, study carrels, and stairs, which give the vast library interior a warmth and sense of scale. At the same time, the library is the most dramatic space, framed as it is by the tall concrete perimeter columns inspired by those in the Great Mosque of Cordoba. Clipped onto the columns are steel catwalks, which, elevated far above the cathedral-like space, allow startling views across the library to a formal study area, a small group meeting space, and down to the work spaces and stacks below. The entire effect is further dramatized by the natural illumination pouring in from generous skylights, supplemented with industrial lighting. Nearby, the new, 500-seat lecture and performance theater features exposed steel trusses and a timber-clad stage area.

For an architect primarily known for his jewel-like, handcrafted homes dotting the rugged Nova Scotia coastline, MacKay-Lyons's ARC is a

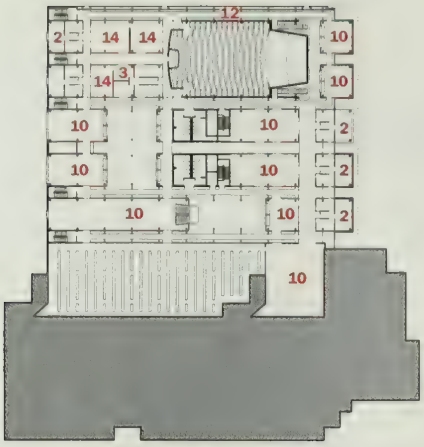
Terri Whitehead is a designer and writer based in London, England. She writes about art and architecture for magazines such as Architects Journal, Blueprint, *and* Azure.

Project: *Academic Resource Centre (ARC), University of Toronto at Scarborough, Scarborough, Ontario, Canada*

Design architect: *Brian MacKay-Lyons Architect—Brian MacKay-Lyons, Hon. FAIA, principal in charge; Talbot Sweetapple, project architect*

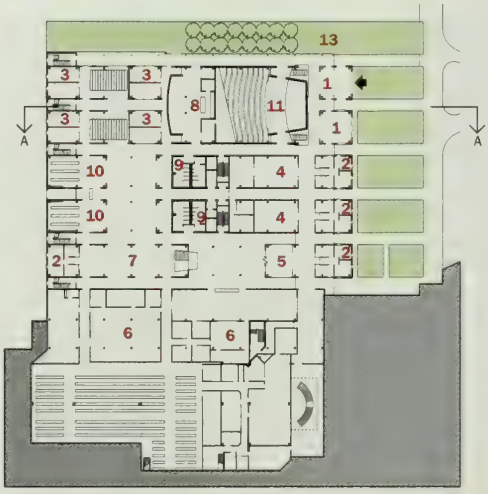
Prime consultant: *Rounthwaite, Dick & Hadley Architects—Rob Boyko, partner in charge; David Premi, project architect*

Project team (for both firms): *Melanie Hayne, Momin Hoq, Kevin McCluskey, Carlos Tavares, Dan Herljevic, Justin Bennett, Diana Carl*



SECOND FLOOR

1. *Lobby*
2. *Offices*
3. *Group study*
4. *Writing center*
5. *Welcome area*
6. *Library services*
7. *Special collections*
8. *Events room*
9. *Bathrooms*
10. *Study*
11. *Lecture theater*
12. *Catwalk*
13. *Garden*
14. *Humanities lab*



FIRST FLOOR

N 0 30 FT. 9 M.



EXPLODED AXONOMETRIC

well-timed experiment that builds on his only other large completed project, the Dalhousie University building, as well as his houses. All obey a rigid structural logic and use well-chosen materials. The campus additions respond to the larger site and public realm. "I see myself as a public-building architect," MacKay-Lyons says. "The houses have been a testing ground, and the ARC is an extension of them." Conceptually and formally, his Kutcher House resembles the Scarborough center. It, too, has thin metal cladding, which wraps over the roof and down the walls. Both also share an internal logic that is expressed through defining the systems of the structure as separate parts of a machine. The Dalhousie building bows more strictly to this logic, using a tartan-gridlike plan of served and servant spaces, whereas the ARC employs the language with more flair and leniency.

Larry Richards, dean of the School of Architecture at the University of Toronto, sees the ARC as having a "material toughness" that contrasts successfully with the Andrews building. Indeed, MacKay-Lyons's ARC strikes a perfect note at the Scarborough campus. It both complements the bold '60s surroundings and reinvents a Modernist vocabulary with a seemingly less prescriptive approach. When viewed next to the dominating Andrews building, the copper-sheathed ARC marks a new age for Scarborough, one that tempers intellectual and physical growth with civilized expansion. ■

Sources

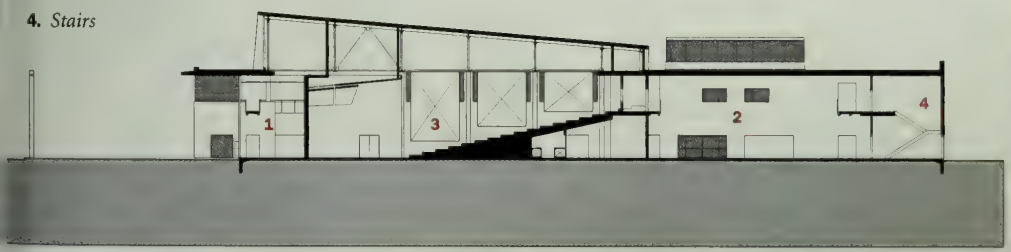
Metal/glass curtain wall: *Alumicor*
Hardware: *Upper Canada Specialty Hardware*
Acoustical ceilings: *Canadian Gypsum Company*
Suspension grid: *Canadian Gypsum Company*
Cabinetwork and custom woodwork: *Amati/Cale Architectural Woodwork*
Carpeting: *Crossley*

For more information on this project, go to Projects at **www.architecturalrecord.com.**



Steel catwalks form an observation deck looking across the library and into the workstations below (right). Cherry plywood in the tables, study carrels, dropped ceiling plane, and stairs brings a warmth and human scale into the cathedral-like library's various spaces (opposite and bottom right) edged with concrete-block walls.

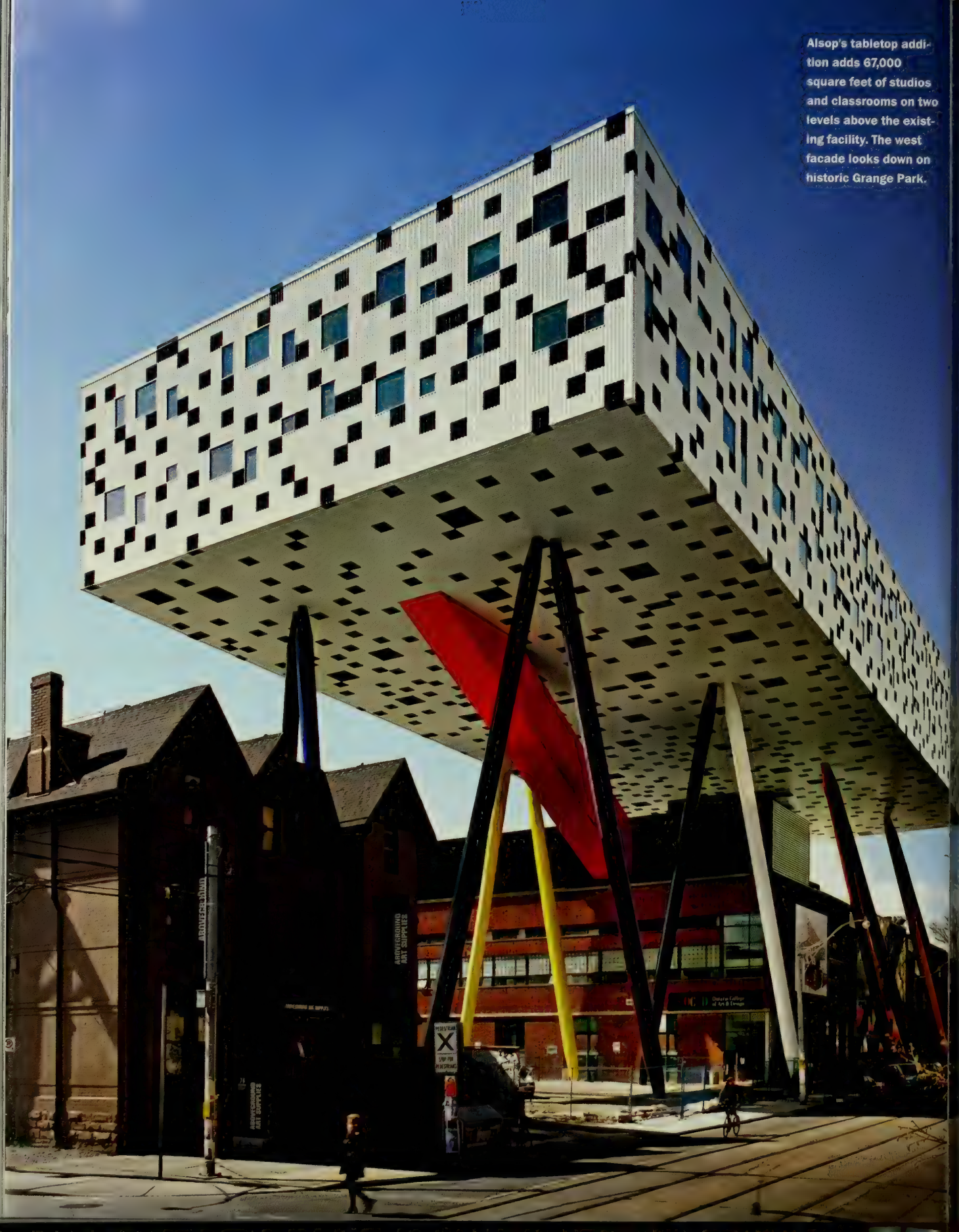
1. *Lobby*
2. *Circulation*
3. *Lecture theater*
4. *Stairs*



CTION A-A

0 30 FT.
9 M.





Alsop's tabletop addition adds 67,000 square feet of studios and classrooms on two levels above the existing facility. The west facade looks down on historic Grange Park.

With his first commission in North America, Will **Alsop** boldly takes to the air at Ontario College of Art and Design's **SHARP CENTRE** in Toronto



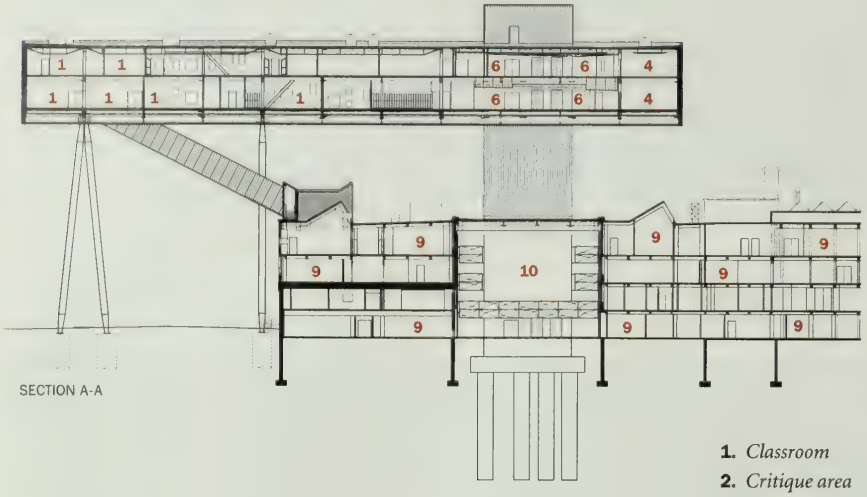
By Sara Hart

Both its form and imagery are stunning, and to some, startling: Toronto's new black-and-white-speckled Sharp Centre, the wonderfully chimerical addition to the Ontario College of Art and Design (OCAD)—the largest and oldest institution of its kind in Canada. Designed by London-based Alsop Architects in a joint venture with Toronto-based Robbie/Young + Wright, the structure is aptly described as a "tabletop," perching as it does on 12 steel legs 85 feet above a low-rise, light-commercial stretch west of the city's central business district, a bland urban context. Although it begs for explanation, Alsop asks that the project not be overanalyzed, and he eschews the temptation to assign theoretical motives to it with a good-natured, not-quite-dismissive, "What you see is what you get." In the case of the Sharp Centre, there's a lot to see.

For quite some time, the school lacked quality studio, gallery, and classroom spaces and the funds to rectify the situation. Then a grant from Canada's $233 million SuperBuild Growth Fund allowed OCAD to mount a capital campaign to raise money to renovate the existing facilities and build the Sharp Centre. The administration and trustees chose a bold strategy, one that would give a prestigious art school the presence it deserves. By selecting provocateur Will Alsop, OCAD got exactly what it bargained for.

Structurally, the 100-by-280-foot box is a system of linked transverse and longitudinal steel trusses. The system is braced horizon-

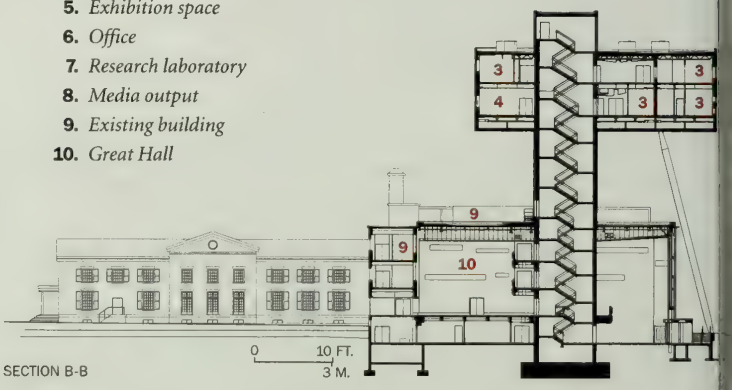
Project: *Sharp Centre at the Ontario College of Art and Design, Toronto*
Architects: *Alsop Architects in a joint venture with Robbie/Young + Wright*
Engineers: *Carruthers & Wallace (structural); MCW (m/e/p)*
Consultants: *Stephen Pollard (lighting); YWLA (landscape design); Sterling Finlayson (urban design); Shaheen & Peaker (geotechnical consultants)*
Contractor: *PCL Constructors*



The tabletop scheme is new construction, but the program called for a new, three-story Great Hall, which the architects carved out of the existing facility (section at left). The interiors (opposite), while bright and lively, are "rough and tough" spaces for work in all kinds of artistic media.

1. *Classroom*
2. *Critique area*
3. *Corridor*
4. *Studio*
5. *Exhibition space*
6. *Office*
7. *Research laboratory*
8. *Media output*
9. *Existing building*
10. *Great Hall*





tally at the floor levels to provide horizontal rigidity. The tapered steel columns are embedded in caissons that extend 60 feet into bedrock. It's sturdy.

The tabletop is clad in white aluminum pixelated by a random pattern of black squares and rectangles. Deep windows of varying sizes are punched into the envelope at different heights. This design move obscures the overall scale by hiding the floor plates, resulting in a structure

"WHAT YOU SEE IS WHAT YOU GET"—AND IN THE CASE OF THE SHARP CENTRE, THERE'S A LOT TO SEE.

that reads as an objet d'art, hovering above the urban fray on splayed legs. Alsop's designs are inspired by personal responses to human behavior, intuitive rather than rationalized. Deep windows allow students to occupy the sills and daydream, since Alsop believes that creativity is fed by fantasy. The window strategy is also his commentary on "the legacy of functionalism [that] dictates that one must be doing something at all times."

The urban impact of Alsop's efforts, however, is not fantasy but a dream come true for neighborhood residents. The west facade of the center looks down on historic Grange Park. Previously, OCAD parking blocked access to the park from the east, and the Art Gallery of Ontario hems it in on the north. Due to this relative isolation, it has not been much of a destination. Happily, Alsop's airborne scheme creates a gateway to the park through which light, air, and people will flow in both directions. This is architecture with collateral benefits—a status symbol that belongs to both the school and the community.

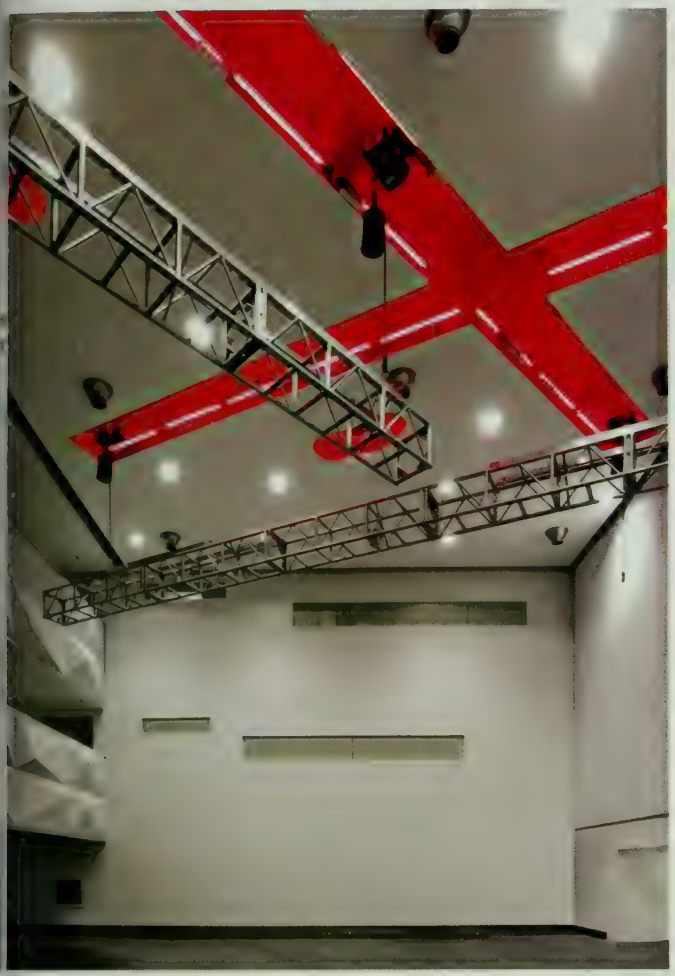
The OCAD addition and renovation does its part to enliven the city symbolically. Toronto is a sophisticated, international city that is, in some respects, temporarily down at the heels. Nowhere is this more glaring than in its cultural institutions, many of which have outgrown their facilities and are precariously serviced by antiquated and inadequate infrastructures.

As it did with the Sharp Centre, the Canadian government is coming to the rescue, or at least jump-starting some major fund-raising efforts with SuperBuild monies. Although thinly spread over the next decade, projects planned for Toronto's future will display the talents of Daniel Libeskind, Norman Foster, and native son Frank Gehry, along with locals Kuwabara Payne McKenna Blumberg and Diamond + Schmitt. ■

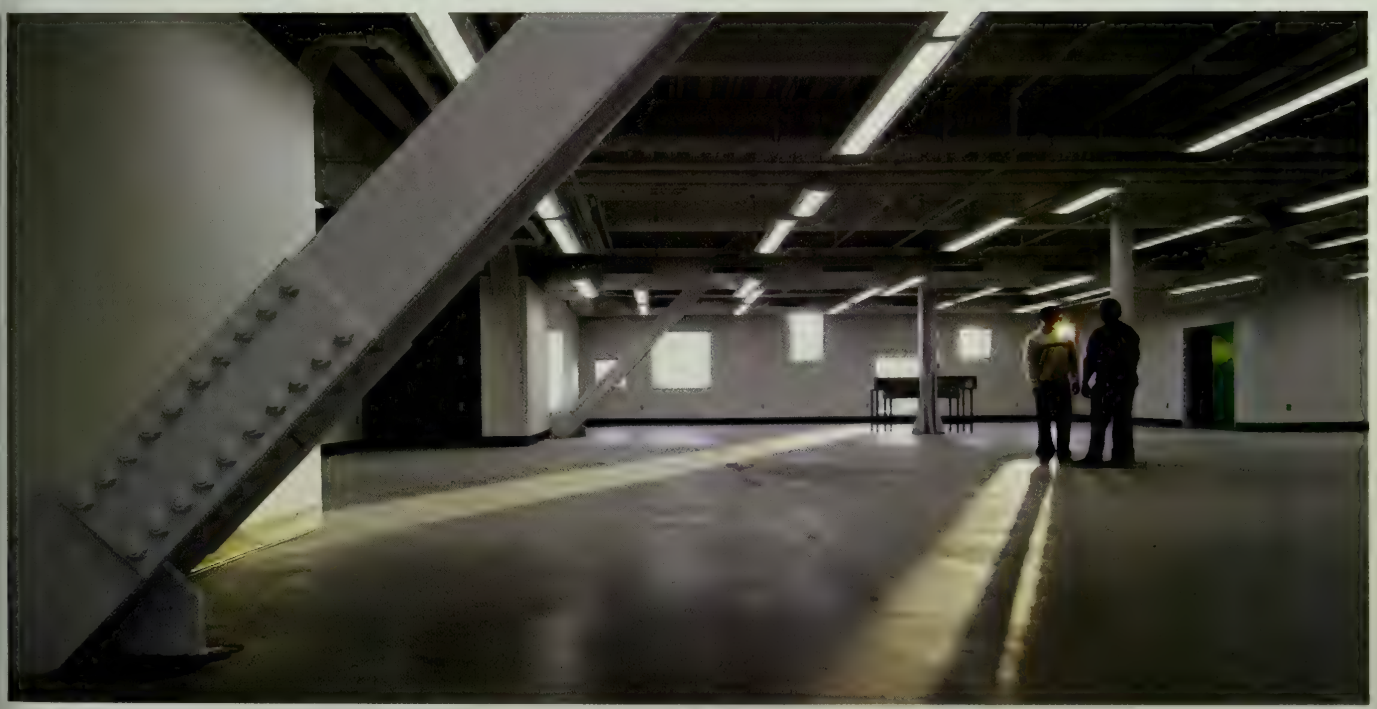
Sources

Curtain wall: *Global Architectural Metals*
Corrugated-aluminum siding: *Flynn Canada*
Glazing: *Prelco (laminated glazing); Vanceva (colored film)*
Structural steel: *Walters*
Special surfacing: *3M (perforated window film)*
Interior panels: *Decoustics (perforated vinyl acoustical panels)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.









Jensen & Macy wrapped a warehouse in a cement-board base with a polycarbonate clerestory. As light shifts, this simple but skillfully composed and detailed facade changes character, ranging from luminously translucent to opaque (this page and opposite).

Jensen & Macy turns an existing warehouse into a glowing lantern, artfully transforming the ordinary at the **CCA GRADUATE CENTER**



By John A. Loomis

Earth, crumpled newspapers, concrete, sticks, and other everyday fare comprised the palette of the *materia povera* ("poor material") that shaped the open-ended experimentation of so-called *arte povera* ("poor art") by artists emerging from the politicized urban culture of 1960s Italy. The results were anything but poor.

Many miles and decades away, *materia povera* was very much the inspiration for Jensen & Macy Architects' recently completed CCA Graduate Center in a postindustrial San Francisco neighborhood on the campus of the California College of the Arts (CCA). Faced with a burgeoning, multidisciplinary graduate arts program and the financial challenges of a nonprofit institution in a post-dot-com economy, CCA signed a 10-year lease for a dilapidated, single-story, 10,000-square-foot warehouse on a visually prominent city corner across the street from its main facility. The architects had to carve out daylit studios while providing seismic and ADA-accessibility upgrades—all within the confines of a minimal budget and an aggressive schedule set by a fall term just eight months away. By artfully wrapping the existing frame and interior spaces in inexpensive, common materials, Jensen & Macy achieved a work of architecture rich in subtlety and restraint, satisfying both urban and human scales. The firm also managed to deliver the project on time and on budget, for a jaw-dropping $71 per square foot.

The signature move was the skin. The architects covered the existing wood frame at its base in corrugated-cement-board panels, punctuated by occasional openings. Corrugated, twin-wall polycarbonate sheathes the top, producing a nearly continuous, rhythmic texture of vertical ribs. The polycarbonate effectively creates a clerestory band, diffusing sunlight deep into the studio interiors by day and producing a softly glowing beacon at night. Changing with the light, this upper register displays a broad range of qualities, varying from opacity to mirrorlike reflectivity to translucency to luminescence—all from a simple, off-the-rack building material.

Inside, Jensen & Macy added a layer of raw, construction-grade plywood at the base, with the lumber encasing 32 individual studios, each a 10-by-20-foot volume open at the top. Every one of these interiors-within-the-interior becomes transformed into a highly individualized space according to the needs, interests, and passions of its resident artist—only to morph again when that artist moves on and another comes to occupy the cell. This evolution generates a delightful experiential contradiction, playing the utilitarian repetition of the shells against the spontaneous and ephemeral individuality of the studios within them.

In addition to the studios, the new graduate center includes a student lounge at the rear on the existing, refinished concrete slab, and at the front, a wheelchair-accessible entry ramp, bordered by soccer netting instead

John A. Loomis, author of Revolution of Forms: Cuba's Forgotten Art Schools *(Princeton Architectural Press, 1999), teaches architecture at the University of San Francisco and, as a journalist, writes about architecture and urban issues.*

Project: *CCA Graduate Center, San Francisco*
Architect: *Jensen & Macy Architects—Mark Jensen, Mark Macy, principals; Frank Merritt, project architect; Dean Orr, Chia-Yu Yen, project team*
Engineers: *Jeffrey Weber and Associates (structural); Guttmann & Blaevoet (mechanical)*
General contractor: *Oliver & Company*



The vertical rhythms of corrugated-cement-board panels and a ribbed, twin-wall-poly-carbonate clerestory band play against the horizontality of the low-slung, single-story, 10,000-square-foot warehouse. Plywood partitions within the existing building give the light a warm cast.


NATIONAL



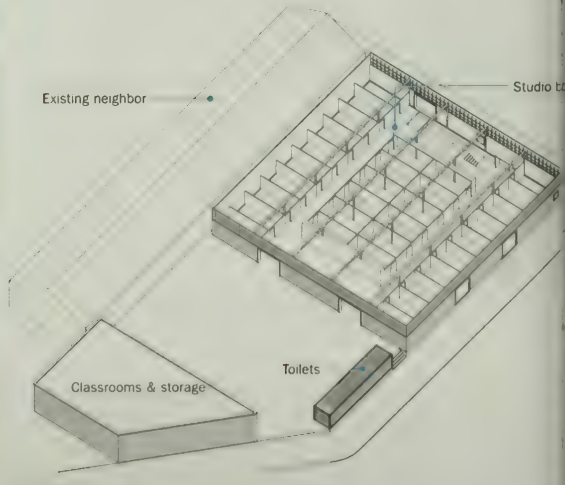
The plywood studios are open at the top, letting in ample sunlight (left and opposite, top). Throughout the interior, finishes remain intentionally raw (bottom left). A prefab restroom unit forms a permanent outhouse (opposite, bottom) for the studios.





FLOOR PLAN

1. *Critique area/gallery*
2. *Typical studio*
3. *Restroom container*
4. *Classroom*
5. *Storage*
6. *Courtyard*



AXONOMETRIC

of conventional guardrails—another Jensen & Macy cost-saving innovation.

An open court, somewhat smaller than the graduate center interior, flanks one side of the building, providing flexible outdoor work and clean-up space. Across the courtyard stands another warehouse also converted by Jensen & Macy, which now houses two large classrooms and storage. A steel shipping container, fitted with prefabricated restrooms, encloses the courtyard along its street edge and compensates for the absence of toilet facilities in the studio building, where the existing, industrial-grade concrete slab made new plumbing prohibitively expensive. Creatively and economically devising an out-of-the-box solution, the architects literally furnished "in-the-box" restrooms. By researching the options, they discovered that one plumbing company had recently introduced a "drop-in," black-steel shipping container housing prefabricated restrooms. In the wake of 9/11, the manufacturer had developed this product to supply sites of terrorist acts with quickly installed emergency units. Part of a growing trend, this omi-



nous object at CCA represents a civilian spin-off from homeland security measures. The big, black-steel box actually looks very FBI. And something about its dark irony as a cultural artifact makes it a hit with both students and faculty.

The demise of dot-com largesse has clearly tightened the belts of colleges and universities throughout the Bay Area. And the effect of this on capital improvement investments and building programs all too often translates into a decline in design quality, even at some of the most prestigious institutions. The increasingly frequent impulse to "fire the architect and go design-build" often yields aesthetics worthy of Silicon Valley industrial parks. But here, Jensen & Macy, along with a client committed to architectural excellence, transcended a stringent budget. By carefully selecting and artistically deploying inexpensive materials, the team achieved uncompromised architectural quality. Just as *arte povera* ennobled the ordinary, the CCA Graduate Center honors the art of its students with its quiet celebration of the everyday. ■

Sources

Metal siding: *AEP Span*

Storefront windows: *Southwest Aluminum*

Polycarbonate panels: *ArcoPlus*

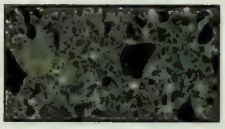
Prefabricated restroom: *Kohler Mobile Plumbing Systems*

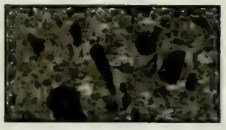
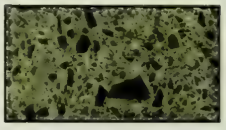
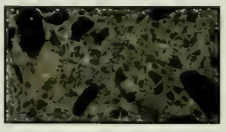
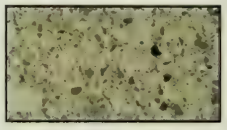
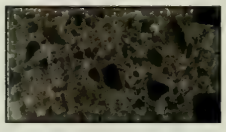
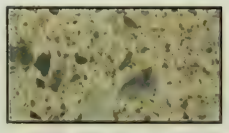
Lighting: *Wellmade (fluorescent strip fixtures); RAB (quartz halogen pendant floods)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

Break Out of the Pack with REFLECTIVITY

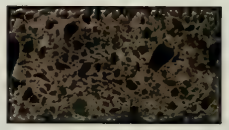
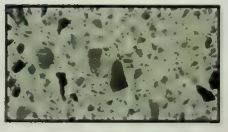
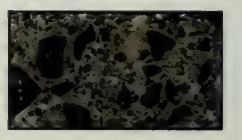
In Your Next Building

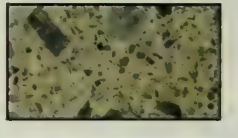
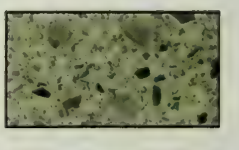
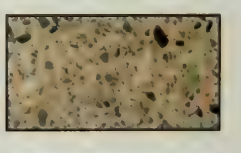
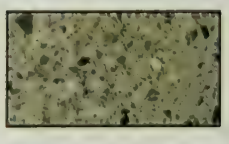


REFLECTIVE DILLON SERIES



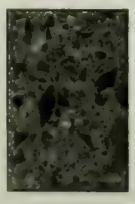




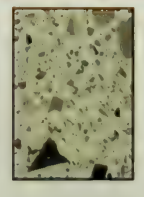





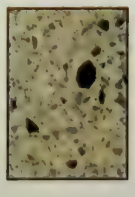
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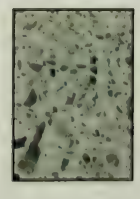
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HOTELS

Sleeping in Style

NEW HIGH-DESIGN HOTELS KEEP OPENING UP HERE AND ABROAD, YET SOME ARCHITECTS STILL CAN'T FIND A PLACE TO STAY. THIS AND OTHER ISSUES WARRANT A CLOSER LOOK.

By Suzanne Stephens

If you go by travel publications, it would seem that smartly done-up hotels featuring high-quality architecture litter the landscape. However, if you ask leading architects where they stay when they travel, they will often admit that finding hotels they can check into without leaving their design scruples at the door is still rare, especially in the United States. And generally, such establishments deliberately appeal to an affluent 20- and 30-something set. Architects and architecture aficionados on the far side of 40 may find themselves feeling as though they have arrived at a very stylish sandbox.

Granted, it is not like the 1950s and the '60s, when numbingly banal storage bins built by hotel chains ruled the world, with Morris Lapidus's souped-up Miami Modern offering the only antidote. Nor is today's situation similar to the 1970s, when bed-and-breakfast inns challenged the norm with antique-filled, quaintly renovated Victorian and Federal-style houses. The following decade brought "boutique hotels," such as the comfortably traditional, small-scale ones started by Kimpton Hotel and Restaurant Group in Seattle and San Francisco before spreading nationwide. Actually, ex-night-club entrepreneur Ian Schrager still deserves credit for radically changing the mind-set: He introduced sleek, ultra-Modern boutique hotels in the late '80s and '90s, with Andrée Putman and Philippe Starck's big-idea/tiny-guest-room approach for the design-minded. If interior designers were the force behind the push more than architects themselves, at least there was hope that innovative architects would be consulted at some point, after the public (and the hotel industry) had warmed up to the new look.

By the '90s, the boutique-hotel-with-an-edge boom had spurred new chains (such as Starwood's W hotels) to attempt to siphon off some of the business. And more recently, the established chains have been creating special categories of hotels to slake the growing design thirst: witness Le Meridien's Art + Tech group, which just opened the Le Meridien Minneapolis, with neo-'60s-Modern interiors by the Toronto design firm Yabu Pushelberg. (Besides the projects covered on these pages, this and several others cited here can be found on our Web site, www.architecturalrecord.com.) And the Hard Rock hotel chain has enlisted Yabu Pushelberg to work with architect Lucien Legrange, AIA, in making over a late-1920s Chicago office tower designed by Daniel Burnham's successor office, the Burnham Brothers. The result of the collaboration is an unexpectedly glamorous shades-of-gray, '70s-James-Bond-style Hard Rock Hotel with 381 rooms.

Not surprisingly, most design-oriented hotels in urban areas are



1.

Chicago, Illinois

Lucien Legrange, AIA, and Yabu Pushelberg have renovated and added onto a 1920s tower for a hotel with high drama and pulsating energy.



2.

Scottsdale, Arizona

Deborah Berke & Partners brings splashes of color, spacious proportions, clean lines, and crisp planes to a desert caravansary.



3.

Milan, Italy

Antonio Citterio and Partners adds dash and a svelte assuredness to an urban enclave attracting people from the world of fashion.

For more information on these projects, go to Projects at www.architecturalrecord.com.

renovations of existing hotels or office buildings; creating new hotels from scratch is expensive and risky. Even in Scottsdale, Arizona, the spare, stylish James Hotel occupies a former '70s hotel. Here, owners Steven Hanson and Danny Errico hired New York architect Deborah Berke to apply a cool and colorful Modern approach to the 200-room, three-story oasis in the desert. And she did so without resorting to the vigas-and-adobe construction.

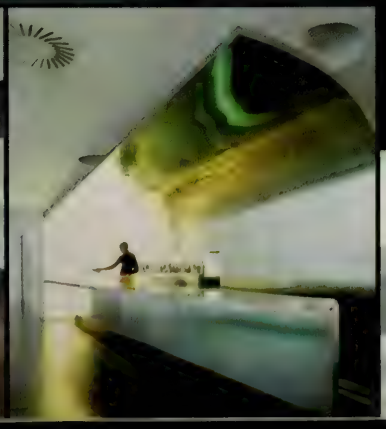
But the United States still lags behind Europe and Asia in sheer quantity of adventurously designed hotels. Milan, for years a wasteland of hotel architecture, all of a sudden has become the new hot spot of Modernismo, where you can find such accommodations as the Bulgari, a soigné 52-room establishment designed by Milanese architect Antonio Citterio, and the intimate 21-room Gray Hotel, designed by Florentine architect Guido Ciompi. Even the Hyatt chain has opened the luxury, 117-guest-room Park Hyatt Milano, with American-born, Paris-based designer Ed Tuttle in charge of the interiors. A Milanese hotel, the Straf, owes its striking look to Vincenzo De Cotiis, a Brescia-based architect and interior and fashion designer. Working with slate, concrete, unfinished iron, and different textures of glass, De Cotiis renovated this 64-room hotel in a distinctive raw-sinister mode, where colors in a room range from anthracite to beige. Meanwhile, in Rome, the es.hotel (the name refers in part to the German word for id), designed by architects Jeremy King and Riccardo

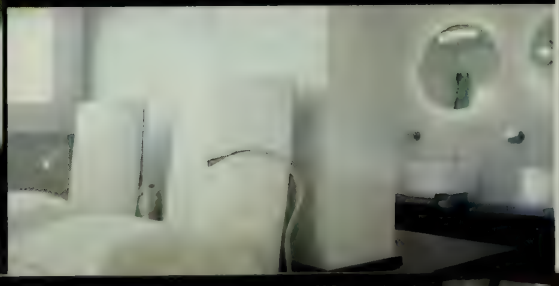
MILAN IS NOW A HOT SPOT FOR BOUTIQUE HOTELS WITH MODERNISMO, YET ROME HAS THE ULTRA-MODERN ES.HOTEL.

Roselli, who have a Rome office, has established a toehold for ultra-Modern design in this historic city. Since the 235-room hotel is not in the center of town, but is located in the Esquilino area—which some consider out of the way—it has to provide a sense of destination. The architects









ES.HOTEL: In Rome, King and Roselli designed walls that face an interior court with room sensors that alter lighting colors (above). Curves define the rooftop restaurant (far left) and a bar (left). The bedrooms open onto baths (below).



HOTEL OMM: In Barcelona, architect Juli Capella and interior designers Sandra Tarruella and Isabel Lopez created sleek lobby (above right), guest room (below), and dining (right) spaces behind a sculptural facade.

designed it to be elevated on piloti above archaeological ruins that were discovered after the hotel was planned. Curved and folded planes carry visitors through the various floors up to the rooftop, where a bar, restaurant, and fitness center are situated.

In Barcelona's Hotel Omm, renovated by local architect Juli Capella and interior designers Sandra Tarruella and Isabel Lopez, the plan and section for the 59 guest rooms achieve varying spaces internally while giving an unusual surface articulation to the new stone facade. Another hotel, the Vigilius Mountain Resort in Lana, Southern Tyrol, Italy, is smaller than most, with 31 rooms and 8 suites. A spa and hotel, it also attracts a more reclusive clientele, since it can only be reached by cable car. Architect Matteo Thun, of Studio Thun in Milan, created the pristine, wood-framed structures with grass-covered roofs that evoke the era of Aalto and Breuer.

In the small-and-remote category is the distinctive Commune, a cluster of 11 guest-room cottages plus a clubhouse next to the Great Wall of China, not far from Beijing. Each individual guesthouse is designed by a different Asian architect, including Tokyo-based Kengo Kuma (the Bamboo Wall House) and Shigeru Ban (the Furniture House).

Even more is going on in Brazil, where the 96-guest-room Hotel Unique, designed by Ruy Ohtake, and the 64-room Fasano Hotel, designed by Isay Weinsfeld and Marcio Kogan, are adding to São Paolo's allure.

Yes, there is a boom in architecturally interesting hotels. In fact, there is even an organization that fosters global fascination with this development. The Commune, the Vigilius Mountain Resort, the James Hotel, the Gray Hotel, and the Straf all belong to an association called Design Hotels, formed more than 10 years ago by Claus Sendlinger, of Augsburg, Germany. As president and C.E.O. of the association,





VIGILIUS MOUNTAIN RESORT: This 41-room hotel and spa in Italy's Southern Tyrol can only be reached by cable car. Matteo Thun of Studio Thun in Milan designed the crisp wood retreat, where nature is the main attraction.





Sendlinger, who has a background in public relations and travel, decided in the early '90s that the hotel industry as a whole was responding too slowly to the changing demographics of the global traveler. The "mass tourists" seeing the sights and willing to stay in uniformly standardized hotels were being replaced by a more sophisticated, educated, and affluent breed "looking for variety and authenticity" in their accommodations, explains Sendlinger. But the hotel industry wasn't paying attention.

Design Hotels claims to have 120 members in its portfolio, with 30 joining it in just the past year. In the early days, Sendlinger and his staff tracked down hotels and asked them to join; now, he says, about 80 percent of members have sought out the association. In return for entrance and annual fees, the hotels receive photographic presentations in stylish directories and are provided with various forms of consultation, including their own graphic design program. "We also recommend architects and interior designers to hotel owners," Sendlinger explains, adding, "We talk to real estate developers about future sites and help them come up with a positioning strategy." Not all hotels can belong: Sendlinger says no to chains, and maintains that Design Hotels is very choosy about the look of a place, down to the arrangement of plants—not to mention the service. Although Sendlinger doesn't send around inspectors, his association keeps tabs on members through customer feedback. "We also like to follow the artistic evolution of the project," he says. "Sometimes new hotel directors come in and make changes, and you end up with a big mess."

As the commitment to high design increases in the hotel industry, there should be extra room for design by architects. But let's hope they will remember that as more and more architects become involved in this building type, comfort is still a prerequisite for the outside world. (This traveler, for example, wants a long and large makeup counter next

to that sculptural sink, plus enough drawers in those ship-cabinlike storage units to properly unpack.)

But the real elephant in the room that no one is acknowledging right now is the graying of the sophisticated traveler who still prefers Modern design in his or her hotel accommodations. It is almost poignant

IT'S POIGNANT TO RUN INTO 50- AND 60-YEAR-OLD AVANT-GARDE ARCHITECTS TRAPPED AMONG THE YOUNG AND HIP.

to run into a 50- or 60-year-old architect with an avant-garde reputation at the Mondrian in Los Angeles or the Mercer in New York. There he or she is trapped amid swarms of the young and hip, with noise reverberating off of every wall, all for the sake of Modern design.

The cruel irony is that architects and the architecturally minded who want to stay in distinctively designed hotels—even for research, if not for pure comfort—must enter a world not necessarily geared to their comfort level. So it is not so surprising to find that a lot of well-known architects of a certain age and income who come to Manhattan stay at the Four Seasons Hotel, the traditional/contemporary, 364-room, limestone-clad structure designed in 1993 by Pei Cobb Freed, with associate architect Frank Williams and Associates. The grandly proportioned hotel is not cutting-edge, nor is it beyond Modern, as the architect-guests may have preferred. But it is luxurious, gracious, and quiet. There is a lesson here about design and demographics. It just hasn't been addressed yet by hoteliers who are hiring architects and interior designers for imaginative and innovative solutions to this ever-changing building type. ■







STRAF HOTEL: In Milan, Vincenzo De Cotiis designed the 66-room hotel with an assortment of metals and stone, plus a limited palette of colors for halls (above), dining space (right), and bedrooms (top right and below).

Hard Rock Hotel
Chicago

1

LUCIEN LAGRANGE PLAYS IT COOL, ADAPTING A CLASSIC 1929 BURNHAM SKYSCRAPER AS A HOTEL, WITH GLITZY INTERIORS BY YABU PUSHELBERG.

By William Weathersby, Jr.

Architect: *Lucien Lagrange Architects—Lucien Lagrange, AIA, principal; Tim Hill, AIA, project manager; Chris Oakley, AIA, senior designer; Marcel Eberle, project architect; Sean Daly, Laura Garcia, Madhu Gupta, Manuel Lamboy, Jordan Rogove, project team*
Owner: *Mark IV Realty Group*
Interior designer: *Yabu Pushelberg—George Yabu, Glenn Pushelberg, principal designers; Kevin Storey, project manager; Karl Travis, Marcia McDonald, Andrew Kimber, Catherine Chain, Shane Park, Fabienne Moureaux, project team*
Consultants: *EME (m/e/p engineer); Tylk Gustafson Reckers Wilson Andrews (structural engineer); Wiss, Janney, Elstner and Associates (exterior restoration)*
General contractor: *Pepper Construction Group*

Size: *295,000 gross square feet*
Cost: *$106 million (construction)*
Completion date: *April 2004*

Sources
Glazing: *Oldcastle Glass; Weather-Tite Windows; Kawneer*
Exterior doors: *Ellison Bronze*
Carpet: *Sullivan Source*
Furniture: *Louis Interiors; Cassina; Tendex; Void Interior Furnishing*

For more information on this project, go to Projects at **www.architecturalrecord.com.**





The Hard Rock Hotel has rolled into the Windy City, and it's not the neon-wrapped shrine of music memorabilia you might have expected. With only a discreet logo affixed to its North Michigan Avenue facade to announce its presence, the 381-guest-room hotel is the new headliner of the landmark 1929 Carbide and Carbon Building, which has been deftly restored, adapted, and expanded by Chicago's Lucien Lagrange Architects. Although interiors by Yabu Pushelberg do serve up some expected flash—with mirrored walls, portraits of rock icons silk-screened onto metal panels, and a modicum of vitrines showcasing the costumes and musical instruments of stars like B.B. King and Sting—it's a more refined look for the chain. Classic rock has replaced theme-park pop on the playlist. Indeed, the Chicago property marks a departure for the Hard Rock Hotel brand, reenvisioned as a joint venture between the Rank Group—the parent company—and Sol Meliá Hotels & Resorts, an international chain.

Program

While older Hard Rocks in resort locations such as Orlando and Las Vegas are targeted toward young vacationers and feature over-the-top architectural follies like oversize electric guitars jutting from the rooftops, this urban address in the heart of Chicago is geared more toward the business traveler, with 11 function and meeting spaces plus a 3,000-square-foot ballroom. And rather than present another franchise of the Hard Rock Café, the hotel this month unveils its final stage, the upscale China Grill.

After its exterior restoration plus the addition of a sleek four-story annex, the Chicago Hard Rock is the architectural equivalent of Mick Jagger in a bespoke suit. Originally designed by the Burnham Brothers (helmed by Hubert and Daniel, Jr., the sons of legendary architect Daniel Burnham) as a corporate headquarters for the originator of the Eveready battery, the Carbon and Carbide Building shines again as a notable Chicago landmark. Considered the younger Burnhams' finest work, the Art Deco–influenced, 40-story building now shows off its dark green terra-cotta tower embellished with gold leaf rising above a base of black marble and bronze trim.

The 1929 terra-cotta facade (opposite, left) and brass-and-marble elevator lobby (near right) were restored. A new four-story addition (opposite, right) accommodates the China Grill, ballrooms, and meeting spaces. The lobby (below) and corridors (far right) offer a glamorous edge with mirrored surfaces and slick, Modern furniture.







1. *Main entrance*
2. *Guest reception*
3. *Bar*
4. *North Michigan Avenue entrance*
5. *Historic elevator lobby*
6. *Retail*
7. *Restaurant*
8. *Guest room*



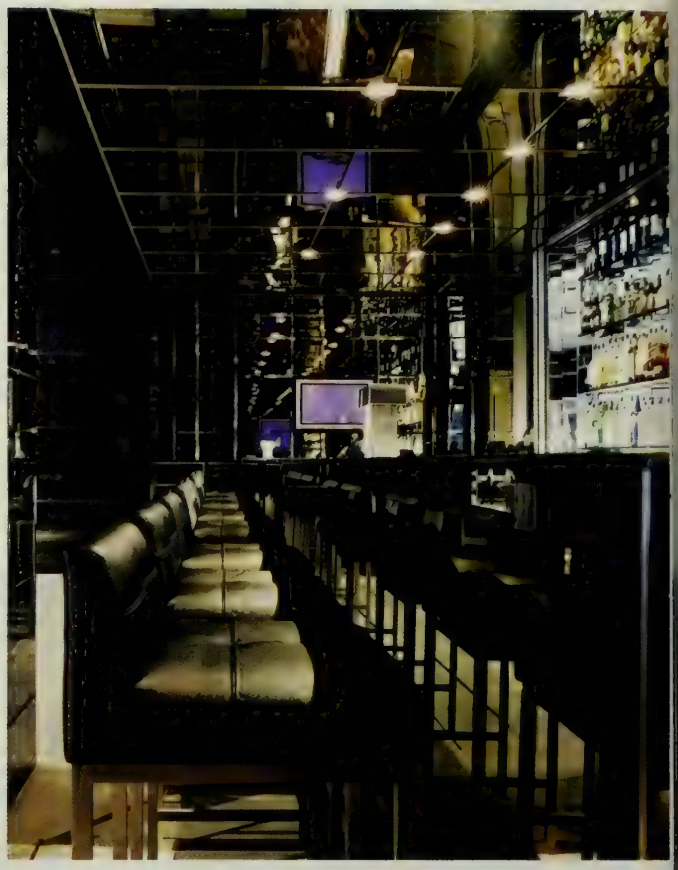
TYPICAL TOWER LEVEL



TYPICAL GUESTROOM LEVEL



GROUND LEVEL



The skyscraper had been a rental-tenant office building when in the mid-1990s the owner decided to convert it to a hotel. Its grand exterior details had been covered by grime over the years to the point that its green luster had faded to black, and original interior plasterwork was damaged. Some spaces had been carved into smaller offices and street-level stores. A challenge to contemporary hotel infrastructure, the poured-in-place concrete floor plates were a mere 2.5 inches thick. "For this building to work as a hotel, we needed to build a four-story addition with higher ceilings to accommodate a ballroom, conference areas, and dining spaces," says project architect Marcel Eberle.

Solution

Rather than slavishly mimic the Burnham edifice, Lagrange's new addition is a jewel box that combines a structurally glazed curtain wall and zinc detailing framed by black granite walls that evoke the original building's marble base. Above the restaurant sits a double-height ballroom with a cutout window overlooking diners below and Michigan Avenue beyond. The original elevator lobby has been restored, while a new marquee on South Water Street is inspired by original Burnham details. Typical floors were fitted out with 17 guest rooms. As required by the building's landmark status, hallways on two floors were restored to a 1920s-era look with marble wainscotting and faux transoms above doors.

Commentary

Brought in 11 months before the opening, Yabu Pushelberg opted for a sexy, 1970s-retro style with shiny surfaces and receding perspectives. With mod leather and chrome furniture and a charcoal-heavy palette, the interiors strike a tinnier note than the Jazz Age facade. Still, this Burnham landmark has been burnished in a fashion befitting its classic status. ■

The Base Bar (opposite and below), tucked off the lobby (near right), plays with perspective by collaging mirror and metal along the ceiling and walls. Carpets with an undulating pattern and leather and chrome furnishings evoke 1970s rock-and-roll glamour, "almost a Playboy Club vibe," says Glenn Pushelberg. Guest rooms (far right) feature zebrawood millwork, tinted mirrors, and faux-fur throws.







James Hotel
Scottsdale, Arizona

2 **DEBORAH BERKE & PARTNERS ARCHITECTS DRENCHES A DESERT HOT SPOT IN COLOR MIXED WITH MODERNISM.**

By Ingrid Whitehead

Architect: *Deborah Berke & Partners Architects—Deborah Berke, AIA, principal in charge; Stephen Brockman, project manager; Jenn Duhamel, Shirley Leong, Terrence Schroeder, project team*
Architect of record: *DLR Group*
Client: *James Hotels*
Engineers: *Paul Koehler Consulting Engineers (structural); Professional Consulting Engineers (mechanical/electrical)*
Consultants: *Ten Eyck Landscape Architects (landscape); Renfro Design Group (lighting)*
General contractor: *Howard S. Wright Construction*

Size: *136,000 square feet*
Cost: *Withheld*
Completion date: *January 2004*

Sources
Curtain wall/glazing/aluminum lobby doors: *Binswanger Glass*
Acoustical ceilings: *Decoustics*
Resilient flooring: *Kamway*
Reception chairs/table/sofa: *DBPA*
Reception desk/shelves: *Ace Styline*
Restaurant chairs: *Janus et Cie*
Banquet pods: *DBPA*
Barstools: *Design Within Reach; Guilietta*
Lighting: *David Weeks for Ralph Pucci (chandelier); Rico Espinet for Robert Abbey (bedside, table lamps); Hallmark Lighting (floor, desk lamps)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

Famous for its luxurious resorts and spas, abundant golf courses, and upwards of 330 days of blazing sunshine per year, Scottsdale, Arizona, a suburb of Phoenix, is an oasis in the heart of the Sonoran Desert. Yet New York restaurateur Steve Hanson and Equinox Gym founder Danny Errico saw the city, with resort hotel rooms priced at an average of $300–$400 per night, as a place that needed a more moderately priced boutique hotel, not to mention something other than adobe and cacti. "There was this gigantic void in Scottsdale," says Hanson, who is president of the B.R. Guest restaurant group, which owns the W Hotel's Blue Fin, as well as Fiamma Osteria and Ruby Foo's, among others, in New York, and Fiamma Trattoria in Las Vegas. Hanson and Errico brought in New York firm Deborah Berke & Partners Architects to design Scottsdale's James Hotel, the first of a planned chain around the country.

Program

"They're young, contemporary travelers who don't distinguish between business and pleasure trips," says Deborah Berke, AIA, of the hotel customers she set out to please. "They're moving up the ladder," adds Hanson, "but they understand value as well as style." With that customer in mind, Hanson found a 1970s-era hotel on a 7-acre site adjacent to Scottsdale's historic Old Town. The building was partially gutted and



totally renovated to produce 200 rooms; 10,000 square feet of flexible event space; a 350-seat Fiamma Trattoria restaurant (Hanson brought in his Fiamma executive chef Michael White); a 2,700-square-foot, state-of-the-art fitness center; as well as a bar and two pools.

Solution

"The existing structure was a real hybrid," says project architect Steven Brockman. "There was concrete, steel, and even some wood framing." The architects kept much of what was there, but, as Brockman says, "We worked with light, color, water, and landscape to add luxury where there wasn't any before." Even the porte cochere (in photo above) had previously existed, but the architects added dramatic lighting to give the guests a grand entrance.

With the existing buildings forming a campus, Berke kept the envelopes of the 325-square-foot rooms in five 3-story buildings. These are accessible to each other and the building containing all public spaces by outdoor corridors, maintaining the campus feel and blurring the boundaries between indoors and out.

Room renovations created an ambience of clutter-free luxury, evidenced by 42-inch plasma screen TVs, a 15-foot work space with shelves against one wall, and custom-made platform beds.

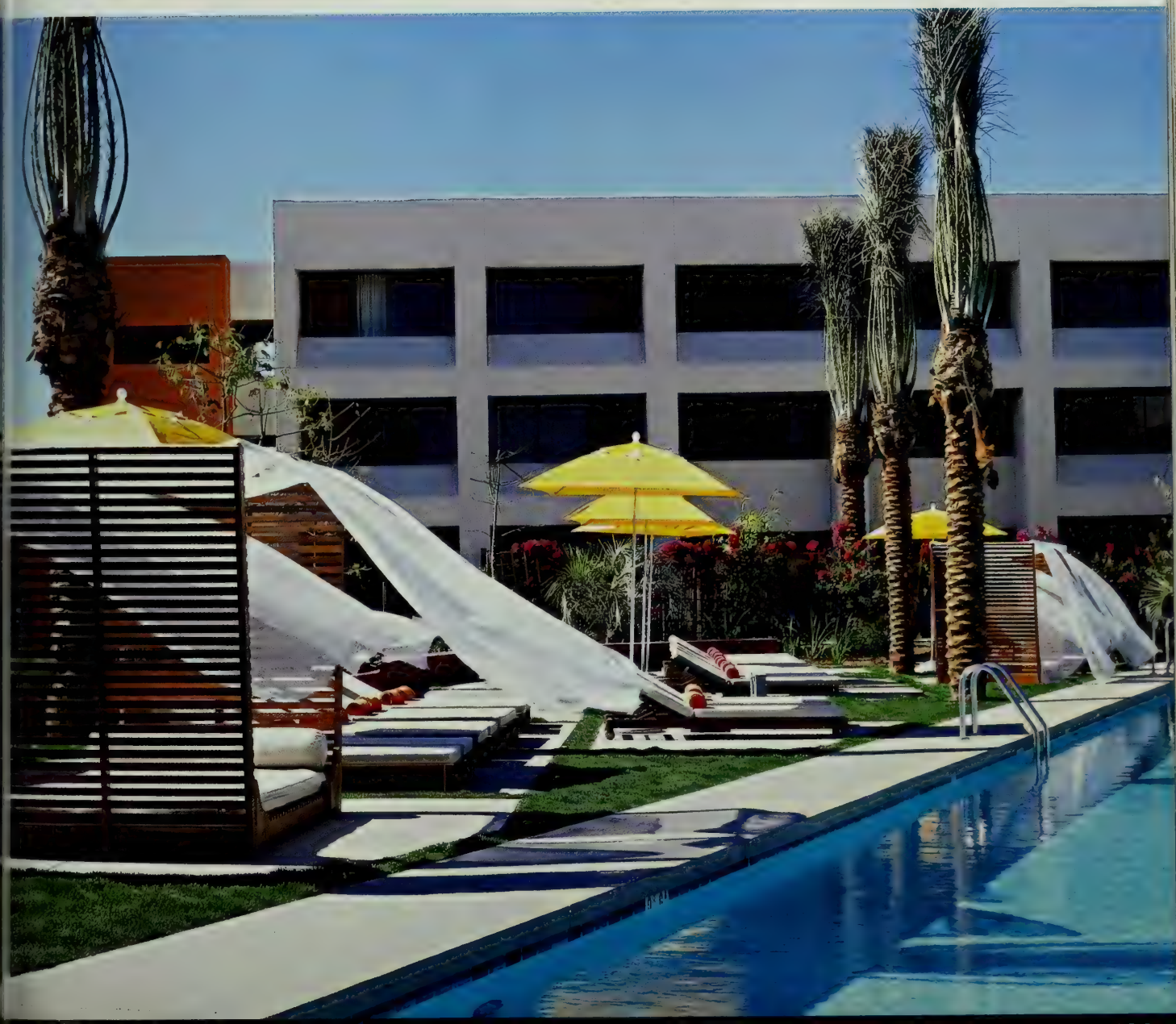
Berke, known for sparse, white, Minimalist design, played against type with the interiors. "We went for color," she says, "intense color."

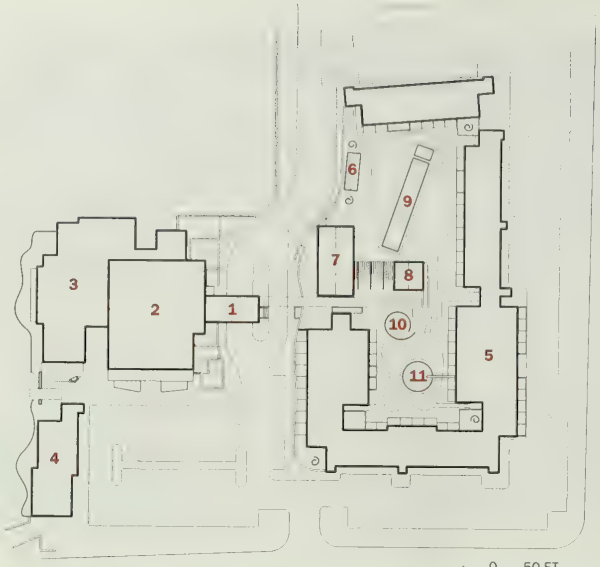
Luis Barragan–inspired purple and fuchsia paint sets off the restaurant's outdoor fireplace, while over-the-top Sheetrock columns in red line the double-height lobby. A white wall at the lobby's end projects James Cagney and James Dean movies around the clock: a not-so-

A Barragan-inspired fountain pours into the outdoor pool (right), which has the word "play" inscribed in tile at the bottom. Berke fashioned the poolside slatted-teak cabanas draped in muslin (far right and below), where at night guests can treat themselves to private, moonlit massages.



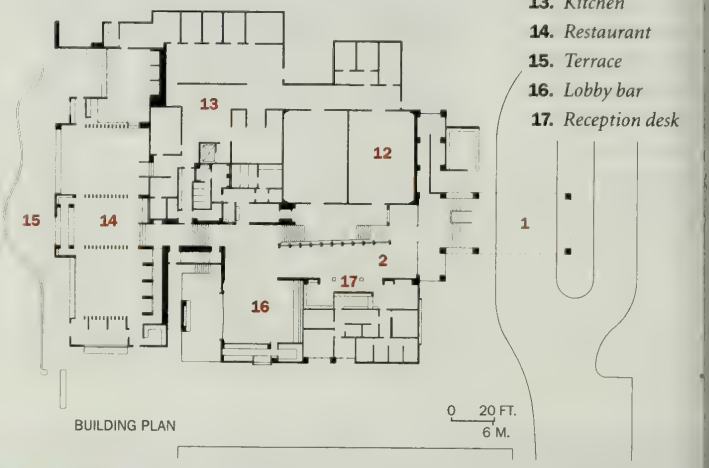






SITE PLAN

1. *Porte cochere*
2. *Main building/lobby*
3. *Dining area*
4. *Executive wing*
5. *Guest-room buildings*
6. *Massage pavilion*
7. *Fitness building*
8. *Pool bar*
9. *Large pool*
10. *Yoga circle*
11. *Small pool*
12. *Ballroom*
13. *Kitchen*
14. *Restaurant*
15. *Terrace*
16. *Lobby bar*
17. *Reception desk*



BUILDING PLAN





Berke designed the furniture in the restaurant (left) and bar (below) with 1950s bold patterns and loud colors. The David Weeks–designed chandeliers provide subtle lighting in the restaurant, although most of the lighting comes from multiple, hidden sources. In the bar, a vertical neon tube is concealed by each "fin," resulting in a wall glowing with ambient light.

subtle reference to the hotel's name. ("It's also named after James the butler," says Hanson.)

Commentary

With rooms from $100 to $285, depending on the season, the James is an affordable retreat. Still, if you just want to stop by for a quiet drink, make sure you're on the guest list, as New York's infamous "velvet rope" seems to have been imported along with the owner and architect. Celebrities such as Paris Hilton and Mike Tyson have been spotted, and much of the crowd seems less black-clad New York stylish than surgically and chemically enhanced Barbie and Ken. The bar and restaurant are packed every night, though, and with the success of the Scottsdale James, owners Hanson and Errico are ready to start the hunt for their next sites, planned for Chicago, Los Angeles, and Miami's South Beach. According to Hanson, the budget will stay slim, and the owners plan to find slightly undesirable existing buildings to renovate, rather than build from the ground up.

The general feel of the hotels as well as the room templates are set for the next installments, but the public spaces will change according to site and location. "And we won't go for such intense color next time," says Hanson. "That worked well for Scottsdale, but we'll definitely tone it down for the next James." ■

Rooms lack clutter but stay functional, with a 15-foot desk extending along one wall (right). A luminous corridor leads from the lobby to the restaurant (far right). A line of bright-red columns (below) demarcates the lobby, providing a backdrop to the crisply rectilinear Berke-designed lounge chairs, upholstered in faux suede. The reception area is defined by a lowered soffit and sculptural columns.







Bulgari Hotel
Milan

3

ANTONIO CITTERIO AND PARTNERS LAYS ON LUXURIOUS MATERIALS IN THE DEBUT BOUTIQUE HOTEL BACKED BY A FAMED ITALIAN JEWELER.

By William Weathersby, Jr.

Architect, interior designer: *Antonio Citterio and Partners—Antonio Citterio, Patricia Viel, principals; Flaviano Capriotti, Ella Dinoi, Lavinia Sciacchitano, Thore Schaier, Tilman Schmidt, Francesca Simen, Diego Di Paola, Carmine d'Amore, project team*
Architect of record: *Ruggero Ercoli*
Client: *Bulgari Group*
Consultants: *Angelo Ferraresi (engineer); Sophie Agata Ambroise (landscape design); Metis Lighting (lighting design)*
General contractor: *Pace 80*

Size: *75,000 square feet*
Cost: *Withheld*
Completion date: *April 2004*

Sources
Masonry: *Colora*
Stone: *Rigo Marmi*
Wood: *Corbetta*
Glazing: *St. Gobain*
Doors: *Astec; Brevetti Sisti; B&B Italia Contract; Lualdi Porte*
Acoustical ceilings, custom millwork, paneling, furniture: *B&B Italia Contract*
Wall covering: *Braendli*
Mosaic tile: *Trend*
Plumbing fixtures: *Sanitec Group; Inda; Hansgrohe; Fusital*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

Just off Milan's chic shopping boulevard Via Montenapoleone on a quiet street behind La Scala, the Bulgari Hotel, designed by Antonio Citterio and Partners, is an oasis of calm in the fashion capital. Adapted from a former convent that incorporates a building dating to the 18th century, the 58-room hotel surrounds a lush garden whose framework was plotted in the 1300s. The hotel still retains the feeling of a cloister, albeit a sybaritic one. A spa lap pool is lined with gold mosaic tile, while public areas are wrapped in exotic materials such as African marble, Turkish stone, and Burmese teak. Yet with the lavish surfaces counterpoised by the architect's rigorous rectilinear geometry, the effect seems almost restrained.

"I wanted to play with typical perceptions of luxury and quality," says principal architect Antonio Citterio. "Some high-end international hotels can seem vulgar, with too much overscaled furniture and overly ornate finery to signify opulence. With Bulgari, we explore the richness of every natural material, and let each speak for itself."

Program

Bulgari joins other top Italian fashion brands, including Armani, Krizia, Versace, and Ferragamo, who have recently spun-off hotels. And the jeweler is jumping in on a grand scale. Parent company Bulgari Group has teamed with the Ritz-Carlton Hotel Company, which will manage its properties, and plans to launch six additional hotels internationally by 2008.



In Citterio, the client has enlisted a high-profile star of Italian design, known for his integrated approach to architecture, interiors, and furnishings. Among other projects, the architect has designed interiors for De Beers LV, B&B Italia [RECORD, March 2003, page 209], Valentino, and Cerruti. His award-winning product designs encompass furniture, lighting, plumbing, and cutlery. The Bulgari in Milan takes advantage of Citterio's wide-roving design eye; the architect selected or designed everything, down to spa sponges and custom coat hangers.

Solution

Situated on the Via Gabba, the hotel presents a new abstract, Modernist facade in juxtaposition to the street's Art Deco apartment buildings. The facade, which Citterio calls a "blank field," is pierced by tall, oak-framed windows lined with black granite eaves, and is intended to express

The white marble facade is punctuated by a cantilevered bronze canopy and oak window frames with black granite eaves (opposite). The hotel encompasses an 18th-century structure and surrounds a garden (right and far right) bordered by teak decking. The lobby is wrapped in black marble (below).











1. *Entrance*
2. *Guest reception*
3. *Office*
4. *Lounge*
5. *Bar*
6. *Restaurant*
7. *Kitchen*
8. *Private dining*
9. *Cigar lounge*





Citterio designed or selected all the furniture and accessories in the guest rooms (above), down to bath sponges and custom coat hangers. A free-standing travertine tub is separated from the sleeping quarters by a gold-mesh screen (above and left). A restroom is distinguished by a black marble lavatory designed by the architect (bottom left).

"refinement and lightness in contrast with the massive neighboring stone buildings," he says.

As guests approach the hotel, its garden can be glimpsed through a wall of shrubbery. The 18th-century section of the facade has been restored, its blocky cornice echoed by the adjacent march of new windows. A cantilevered bronze canopy balances the composition.

In the lobby, coffee-colored walls of veined teak complement a fireplace and floors clad in black Zimbabwe marble. Low-slung contemporary furniture is upholstered in black leather or natural cotton. Tall, narrow windows overlook the entry court as well as the garden.

The Bulgari restaurant features a lenticular ceiling suspended over a bronze bar. A large oval balcony of black resin overlooks four landscaped terraces, which serve as extensions of the interior space. Teak decking provides a visual connection to interior paneling.

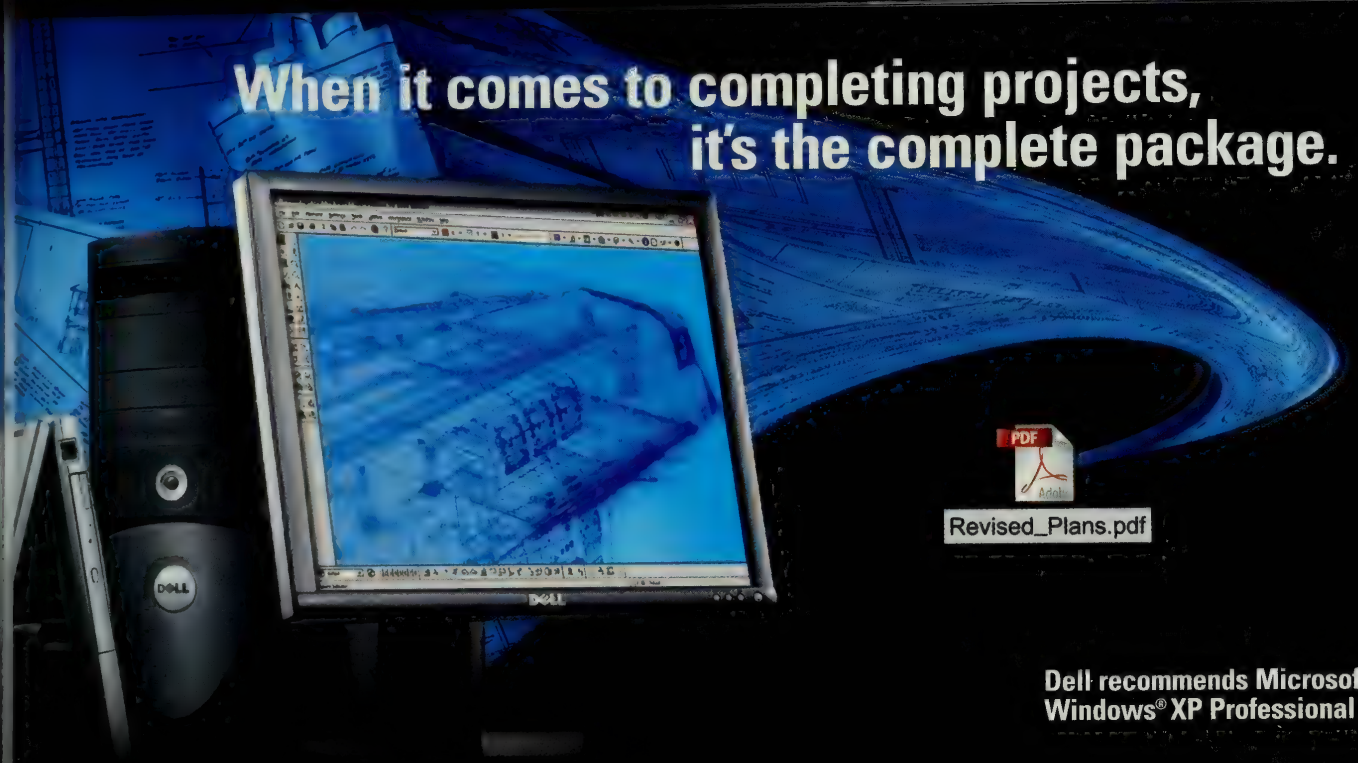
Guest-room corridors are sheathed in graphite-dyed oak and fabric-upholstered walls. Doors to guest rooms, which Citterio likens to the portals of jewelry vaults, are almost a foot thick to provide acoustic privacy. In each room, bleached oak surfaces are combined with bronze detailing and natural cotton upholstery. Freestanding black-granite or travertine tubs are separated from sleeping chambers by screens of gold mesh.

Commentary

Designed by Sophie Agata Ambroise, the garden itself is a gem. Evergreens climb a helix-shaped pergola, and pathways are bordered by roses and box-tree topiaries. A meditation "room" has a hedge of red beech surrounding a parterre of lilies of the valley: Urban luxe is translated into botanical lushness.

With all furniture and accessories designed by the architect, it might as well be called the Hotel Citterio. Many products—from linear chrome lamps to bathroom faucets—are familiar from design catalogs. It is perhaps a fitting collection: Since Citterio lives just 300 feet away, he calls the Bulgari his "home away from home." ■

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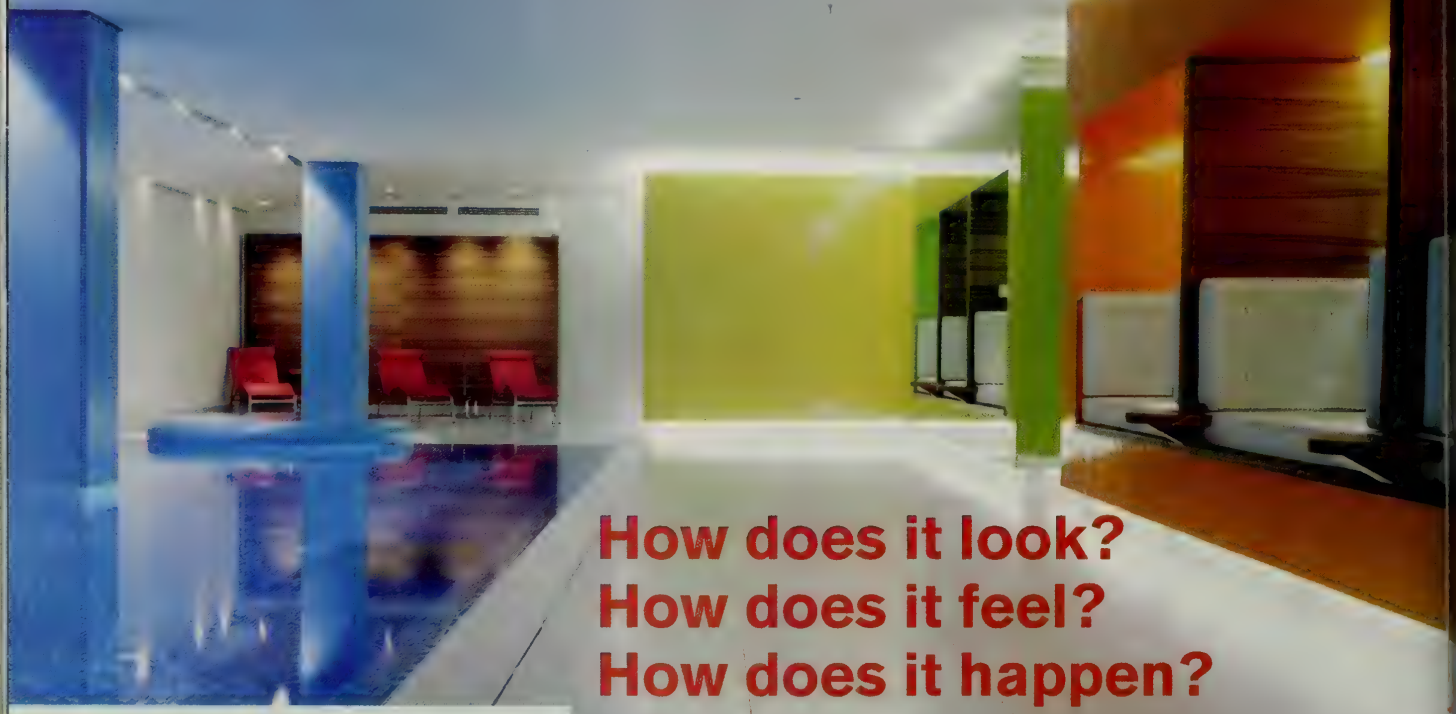
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Hotel Side, Hamburg. Jan Störmer Architekten. Courtesy Sto Corp.

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CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Color & Texture.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 170, then follow the reporting instructions on page 246 or go to the Continuing Education section on ***archrecord.construction.com*** and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Have a better sense of the trends in color and textures in design.*
- *Know the materials that can be used to achieve desired color and texture.*
- *See the trends in color and texture in various project types.*

Secrets of nature are being revealed and utilized in unimaginable ways.

Architecture has long been influenced by science, but, perhaps never so overwhelmingly. Tomorrow's themes of color and texture will be not so much a matter of matching paint chips as creating entirely new combinations of materials, textures and colors—to create dazzling visual displays that both delight and give flight to imagination.

Nowhere are the technologies of color and texture so evident as in the retail marketplace.

Prada commissioned 2001 Pritzker Architecture Prize winners Jacques Herzog and Pierre de Meuron and Rem Koolhaas' OMA to transform the retail experience into something like the milk bar in Stanley Kubrick's "A Clockwork Orange" in separate projects in the U.S., Japan and Italy.

"Prada Aoyama...sets out to redefine the traditional distinction between glass curtain wall, structure and façade, in the process eliminating the traditional differentiation between architecture, shop window and display. Everything is a display; everything is architecture. In fact, everything is a spectacle," says Studio International's Kwah Meng Ching.

Before Prada, Herzog and de Meuron employed printed, translucent walls to filter light to a factory and storage building in Mulhouse, France; employed twisted copper strips in an exterior cladding system to admit daylight to a railway utility building in their hometown of Basel, Switzerland; and at a library for the Technical University in Eberswalde, Germany, created a mind-bending visual, using 17 horizontal bands of iconographic images silk-screen-printed on glass and concrete.

Prada commissioned 2001 Pritzker Architecture Prize winners Jacques Herzog and Pierre de Meuron and Rem Koolhaas' OMA to transform the retail experience into something like the milk bar in Stanley Kubrick's "A Clockwork Orange" in separate projects in the U.S., Japan and Italy.

Los Angeles architect Giorgio Borruso similarly turned retail architecture upside down with West Coast projects for boutique retailer Miss Sixty and Italian clothier Fornarina.

What is successful in retail, U.S. designers generally agree, eventually makes its way into other markets, first into corporate and hospitality, eventually into institutional projects. At least portions of what Borruso is doing today at Fornarina, they say, will creep into U.S. General Services Administration RFPs 10 years down the road.



Polished porcelain tile. Courtesy Portobello.

"In terms of surfaces in general, whether we are talking color, texture, light transmittance—whatever characteristics, we are becoming much more interested in the complexity in surfaces, not just in the aesthetics, but in the structure," says Elva Rubio, who heads the Chicago design studio for San Francisco-based Gensler.

"For quite a while," says Rubio, "say, from the emergence of the post-modernist era through the end of the 20th century, we were interested in surface color and texture only in a superficial way. Now," she says, "everybody is thinking more deeply about the 'structure' of color. You can see it in retail; you can see it in architecture; you can see it in industrial design."

In their search for new visual imagery, today's designers have at their disposal an array of new products, a huge new palette of engineered colors and an almost incessant stream of new technology.

James Carpenter, whose "Lens Ceiling" at the Richard Meier-designed Phoenix federal courthouse was a 2003

Benedictus Award winner, says that the primary focus of his design is always "the exploration of the natural phenomenon of light in transmission, reflection and refraction as they influence architecture."

...we are talking color, texture, light transmittance—whatever characteristics, we are becoming much more interested in the complexity in surfaces...

Carpenter's inspiration for Phoenix, where his suspended lens forms the ceiling of the Special Proceedings Courtroom: a bubble of air resting gently on a surface of water. "The structure is so strong that people can walk on it to clean it," remarks a Benedictus juror; "an engineering and artistic marvel," says another.

Rubio says Gensler collaborates, in box-lunch sessions, with researchers in a variety of unusual disciplines in pursuit of out-of-the-box answers to seemingly elemental design problems, asking questions like, "What makes the sky blue?"

The answer, of course, is that things in nature are sometimes not what they seem, that the color of the sky is a result of refraction, not pigmentation, and that color can be a deceptive element.

In Chicago, trying to understand how they might "magnify" light to illuminate a cavernous public space, Gensler designers called in scientists to share results of studies of a Costa Rican butterfly.

"Pilots say they can see from the air the flash of the wings of the bright, blue Violet Morpho when it opens its wings in the jungle below," Rubio says.

When light strikes the butterfly's wings, researchers have discovered the light is somehow magnified, a trick of evolution, an iridescent "deceit" in the mating ritual of the Morpho. Gensler hoped to figure out how it might similarly "magnify" light to illuminate with fewer lumens.

The firm's exploration of design opportunities led it to discussions with Jay Harman, a former naturalist with the Australian Department of Fisheries and Wildlife, now CEO of an industrial design firm that calls itself PAX Scientific.

Harman logged thousands of hours studying the flow patterns of ocean and air currents, came to conclusions about the effectiveness of natural flow systems and from them is developing revolutionary designs for fans, turbines and pumps.

"Nature knows how to move fluids," says Harman. "Now PAX knows what nature knows."

Now Gensler knows what PAX knows, at least in part.

Their forecast for 2005?

This is what Andrea Piontek, senior color stylist for PPG Industries' paint division and a CMG member, has to say:

There won't be a huge directional change in color, but more of a value change. Values will move lighter, as colors will become washed with gray. Colors continue to cool down, while neutrals are influenced with yellow, to become complex. Reds are softened and neutralized, the greener blues are shifting to green, and blues influenced by the spa experience rejuvenate the palette to reflect comfort and security. In addition, soft fresh yellows infuse the palette to signify a positive outlook on the future.

So, there you have it...

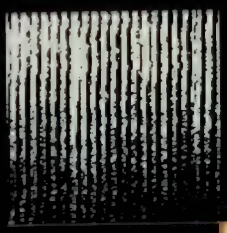
The predominant residential color schemes in the coming year? Piontek says "Harvest Gold" is back in vogue:

Contrast will gain importance for color schemes, such as deep royal blue combined with spice make their spirits soar, and take inspiration from the cues of nature. The monochromatic combinations that were safe in the past are retreating to make room for the contrasting combinations of color.

Neutrals will grow in popularity, as the term neutral continues to envelop more and more colors. In the past, neutrals were considered colors lacking color. That couldn't be further from the description today, as colors that are infused with gray move to the neutral category and are used in combination with a variable myriad of color.

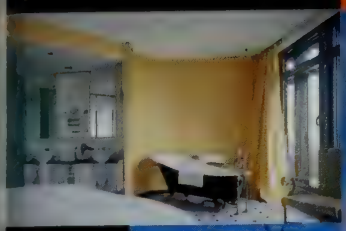
There is a hot new color every month, since the cycles of color are shortening. Colors that were popular two to three years ago are making their way back to the market. The color that was known as "Harvest Gold" in the '70s is back again for the second time in five years, but it isn't the muddy color of the '50s '60s and '70s, but a clean vibrant color. Gold is a great accent color, like jewelry in a room; all colors look good with gold.



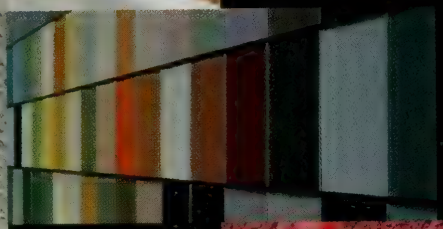


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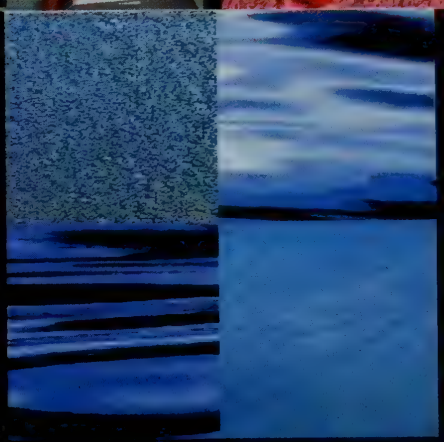


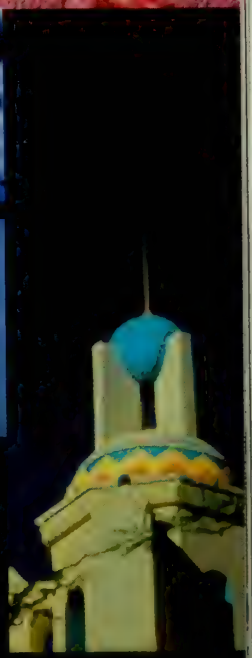


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The impact of color

Researchers have understood since early in the 20th century that color can have a significant impact on behavior. Fast food restaurants now know that red and orange increase appetites. Casinos understand that the same colors have the effect of making people gamble with greater abandon. A Washington State University study concludes that people can tolerate more pain, recover more quickly from surgery and use fewer drugs when they are surrounded by green.



QuadPlex in Frankfurt/Main. Architect: Marcel Kaschub. Courtesy Sto Corp.

Our color choices also are influenced by climate. Northern homeowners overwhelmingly choose medium-to-dark color schemes with dark woods because they feel "warmer." Southern homeowners strongly prefer pastel color schemes with light woods to achieve the opposite effect.

In forecasting what they believe will be tomorrow's sought-after colors, members of organizations like the Alexandria, Va.-based, 1,500-member Color Marketing Group (CMG) rely on world events, economic indicators, demographic change, and perceptions of pressure in the workplace.

"We are watching a merger of technological and human influences in both color and textures," says Doty Horn, director of color and design for Benjamin Moore & Co. "We are also seeing a lot of residential influence in the areas of offices and health care."

Paint manufacturers, like those in almost every other area of construction, have grown increasingly responsive to the demand for "green" building projects. Last year, Benjamin Moore obtained both GreenGuard and Greensea certification for its line of low-emitting interior paints. This interior line of products, which consist of a prime and three finish coats, are "green" because they emi virtually zero VOCs and low odor. The company has success fully removed solvents that are responsible for the odor o traditional paint. Both oil-based and conventional late paints are solvent-based.

Benjamin Moore has successfully removed all solvent that are responsible for the odor of traditional paint, a well as contributing to placing harmful VOCs into the environment. The products are high in hiding, odorless during application, rapid-drying, and clean up easy with water. They are also VOC compliant, and allow for a quick return to service/occupancy.

The products are available in three finishes: flat, egg- shell and semi-gloss. Each finish comes in a pure white has a high light reflectance value (LRV) of 90. Tinting bases in each finish will produce an additional 1,100 custom shades, giving clients a wide choice of colors.

Among the new tools to make color choices easier are "personal color viewers," available online, which enable users to see their room and click through thousands of different color choices and combinations to see the effect prior to purchase.

Color samples allow you to "try on" a color before committing to the time and expense of painting an entire room. Interior designers and professional painters do a "brush out" when deciding on color when deciding between several shades of a particular color, or to see how a color is influenced by lighting.

Ask William "Billy" Rosbottom about architects and color and he quickly cites Terence Riley, a partner in Keenen/Riley Architects, New York, and Curator of Architecture and Design at the Museum of Modern Art.

Prosperity manifests itself in richer, textured designs with greater depth and complexity...

"Architects are afraid of color for a couple of reasons," Riley contends. "The first is our fairly well-justified fear of fashion. Who wants a building that turns out to be like an avocado refrigerator, the equivalent of permanent bell-bottoms. The second reason is the unjustified belief that color is not critical. Not enough architects approach color in an intellectual way; we are trained that the ideas are in the lines."

Rosbottom, a former interior designer for a Los Angeles environmental design firm, today manages Sto Studio Atlanta, one of 25 Sto studios worldwide. Sto manufactures a broad range of both organic and inorganic silicate and synthetic



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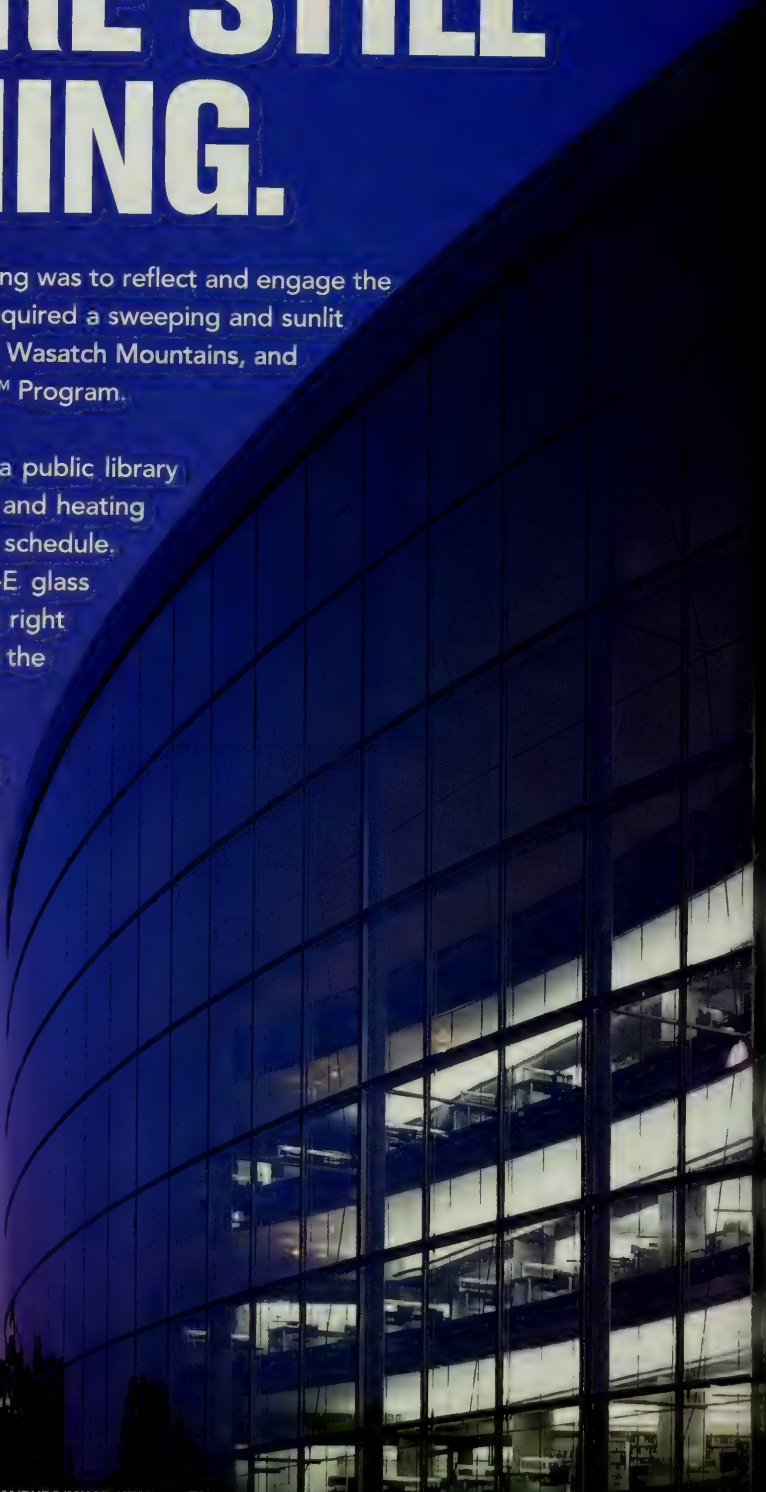
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The goal for Salt Lake City's new main library building was to reflect and engage the city's imagination and aspirations. Achieving this required a sweeping and sunlit design, a desire to embrace the view of the nearby Wasatch Mountains, and a call to a member of the *PPG Certified Fabricator*℠ Program.

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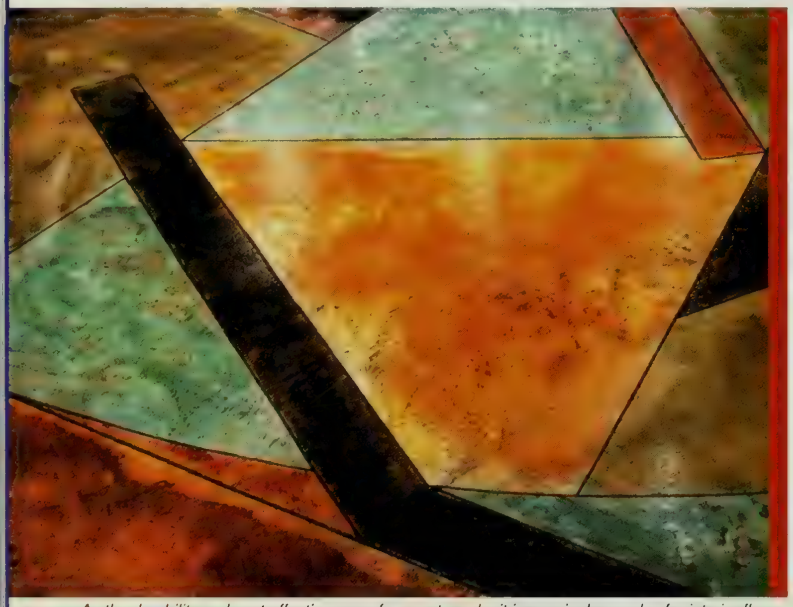
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plasters and admixtures including a marble powder suitable for polished finishes from satin to high-gloss.

Rosbottom believes that color, too often, is discounted by design professionals

"Architects," he says, "very often, have so much on their plates—code decisions, leaking windows, difficult roof membrane systems and HVAC decisions that are critical to the performance of their building—that they can't focus on something so integral as color. Color is too often seen as peripheral," Rosbottom insists.



As the durability and cost-effectiveness of concrete make it increasingly popular for interior floors, architects are looking for ways to upgrade its appearance. Chemically reactive stains can be used to color newly cured concrete or to rehabilitate and update existing slabs. Courtesy L. M. Scofield.

Prosperity manifests itself in richer, textured designs with greater depth and complexity, Rosbottom contends. But even in austerity, customizeable, textured finishes can provide elegant solutions.

St. Paul's Walker Art Center was in the midst of a fund drive for a planned $90 million expansion in 2001 when the U.S. economy came untracked. In place of natural stone, Herzog and de Meuron opted for a austere EIFS cladding system, but textured the exterior with a relatively new combination finish in which an initial 1-mm-aggregate texture is topped by a finer finish. The result is a seamless surface similar in appearance to limestone, but which looks almost marbelized. The finish gives Walker a look of permanence, even elegance, at a cost considerably less than the cost of stone.

The Walker's new wing, scheduled to open in 2005, will nearly double the size of the facility and incorporate four new galleries, a 385-seat theater, a restaurant and, most importantly, a meandering concourse dotted with seating, conversation nooks and new-media bays that Kathy Halbreich, Walker's director, hopes will be as magnetic as traditional town squares.

Creative surface coatings are undergoing great popularity says Rosbottom, "and their special character helps define a room's atmosphere."

Trendiness vs. timelessness

Lewis Dominy, AIA, president of Dominy + Associates, a 23-person design firm in San Diego, has found an unusual niche. Church design and restoration accounts for three-quarters of the firm's volume. The lesson Dominy has learned is one that applies to all disciplines and markets: "trendiness," he says, is to be avoided at all cost, in favor of "timelessness."

To date, Dominy has worked on 120 churches, mostly in Southern California, occasionally in Arizona and New Mexico. He says he has learned to guess, before being told, the date of a church's last restoration.

...trendiness is to be avoided at all cost, in favor of timelessness.

"Colors and patterns define the period," Dominy says. "The churches of the 1970s were dominated by orange colors; those of the 80s, by mauve. We now try very hard not to be too strong with color. As a rule, the more permanent the element the more neutral we are with color."

"In the current issue of *Faith and Form* (the magazine devoted to religious architecture)," says Dominy, "is an article studying Richard Meier's Jubilee Chapel in Rome, a display of travertine and white. It is gorgeous in its simplicity. That is sometimes the hardest thing to do."

At the Solana Beach Presbyterian Church in San Diego, Dominy is using cream-colored Brazilian tile with verde green accents to create a 6,000 sq. ft. pinwheel pattern on the floor that is the focal point of the sanctuary. "We looked at slate and a number of other materials," he says. We decided on porcelain tile for a number of reasons: First of all, tile permits you to have very small grout joints. It is also extremely hard. It is durable and it has a lot less 'texture' than natural materials. All those elements make tile very attractive from a maintenance standpoint.



Polished porcelain tile. Courtesy Portobello.

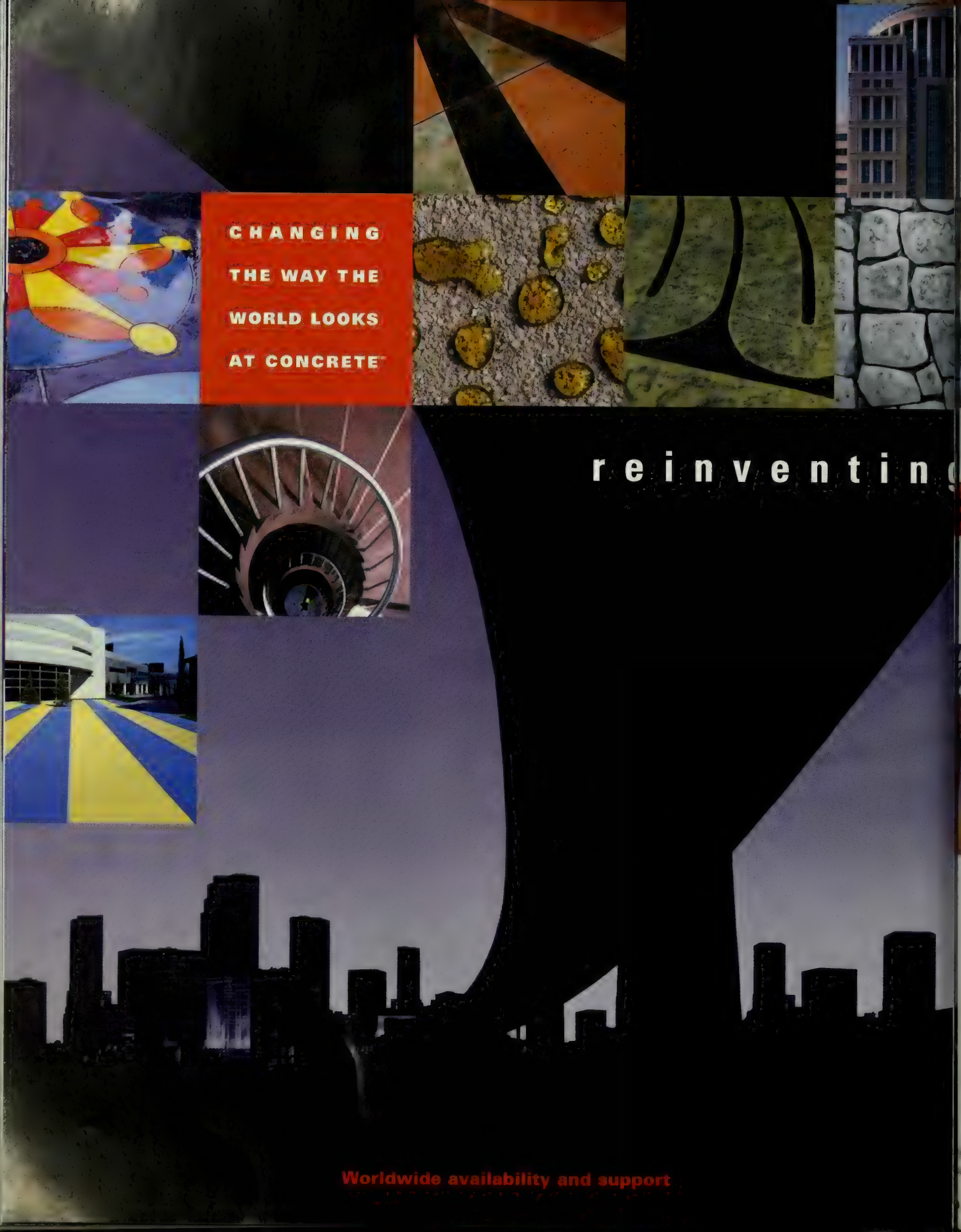
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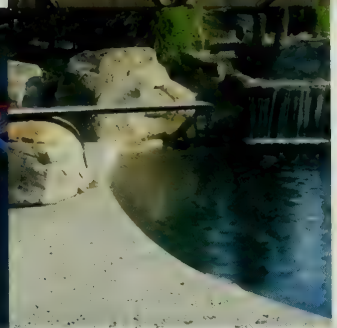
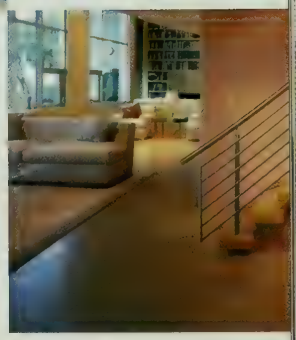
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"Our energy laws here in California also allow us energy credits for using tile. When used on southern exposures, it acts as a heat sink," Dominy says.

"It's important to note that there are different types of porcelain, including dishes and dolls, which can be very fragile," says Carl Harris, director of the architectural division of tile manufacturer, Portobello America.

"However, when we speak of porcelain tile used in both residential and commercial applications, we are speaking of a product that uses selected clays and other minerals such as kaolin (a clay hardener) and feldspar that create, through the manufacturing process, a very tough and long-lasting product."



Tile and stone application. Courtesy LATICRETE.

"Ceramic tile otherwise known as 'Gres' tile uses different clays and manufacturing processes that do not create as durable or as long-lasting a product. Generally, porcelain tile is significantly harder than even natural stones such as granite and certainly marble," Harris says.

"Typically, tile manufacturers are able to combine two to four shades of color in any given tile. New manufacturing processes enable us to now incorporate up to eight shades within a single tile—the end result being a greater breadth and depth of color and the ability to replicate with exactness the appearance of natural stone," Harris says. "Many of the new tiles are named after natural stone, and you can't tell the difference between tile and stone."

Harris says a survey of 1,000 architectural specifiers and principals conducted early last year revealed that 78 percent of architects make no distinction between ceramic and porcelain tile.

"That surprised me," he says. "In the manufacture of porcelain tile, the material is compressed to 450 tons/sq. in., making porcelain incredibly dense, durable and almost wholly impervious to water. Porcelain outperforms ceramic in every area. Pour water onto the back of a ceramic tile and it will absorb a great amount; pour water onto the back of a porcelain tile and it will bead up. Its absorption rate is less than one percent."

New colors, new materials, new looks

Such is the influence of color, that the glass division of PPG Industries has built a marketing campaign and modified its architectural glass product line to bring to mind the myriad moods of the sea.

Its four-color collection of spectrally selective glasses is designed to provide color options and at the same time improve thermal performance.

Spectrally selective glass generally has a light to solar gain ratio (LSG) of 1.25 or higher. LSG is the ratio of solar heat gain coefficient (SHGC) to visible light transmittance (VLT). Spectrally selective glass allows more visible light into a building while reducing heat gain.

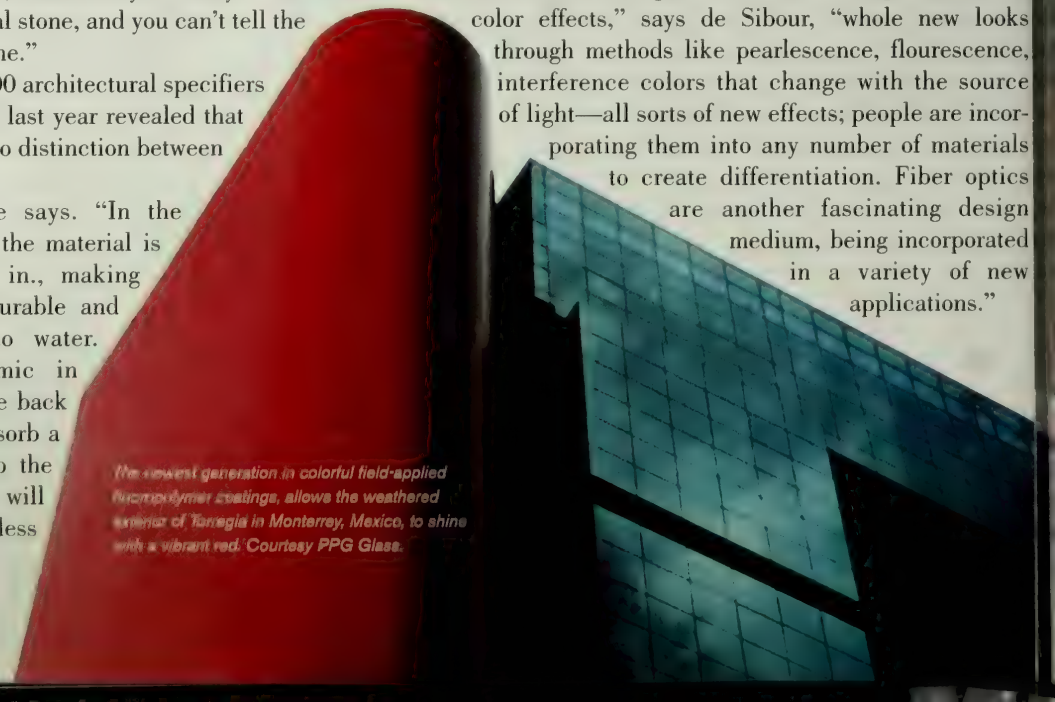
Manufacturers in general are achieving tremendous color effects...

Thomas O. Gray, AIA, of Pittsburgh-based IKM, Inc., says the distinctions between "green architecture" and conventional architecture are slowly disappearing and that spectrally selective glass, once relatively uncommon, is now gaining broad acceptance by the architectural community.

'Not only are these products very attractive, but they have very good solar performance characteristics and can be coupled in a thermal unit with low E coatings to further enhance their performance,' says Robert Struble, PPG flat glass division communications manager.

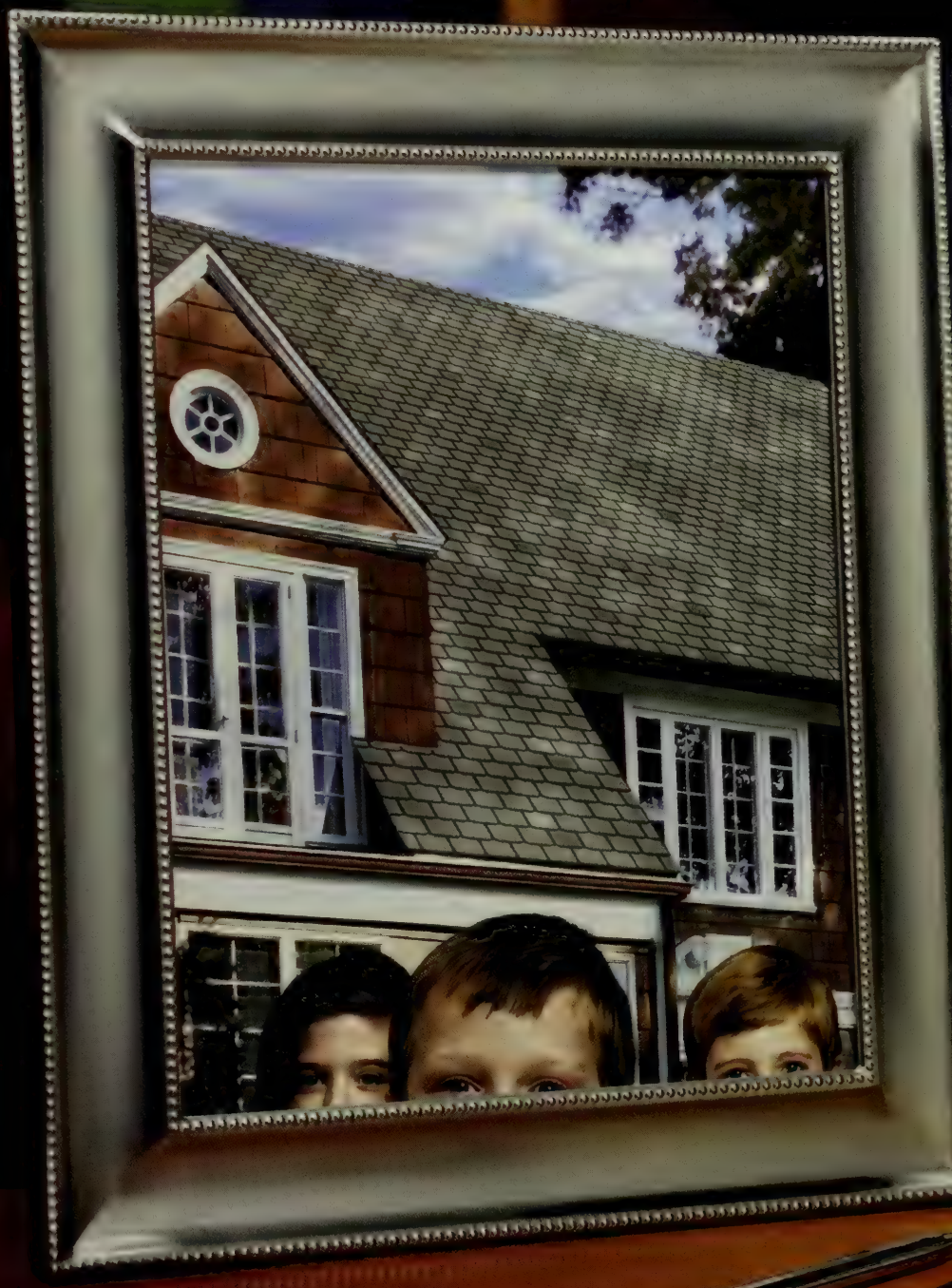
"The new possibilities are seemingly endless," says Jay de Sibour, senior account manager for the New York-based Material ConneXion. 'We are seeing new polymers every day and, because of materials technology advances, new applications for many existing materials.

"Manufacturers in general are achieving tremendous color effects," says de Sibour, "whole new looks through methods like pearlescence, flourescence, interference colors that change with the source of light—all sorts of new effects; people are incorporating them into any number of materials to create differentiation. Fiber optics are another fascinating design medium, being incorporated in a variety of new applications."



The newest generation in colorful field-applied fluoropolymer coatings, allows the weathered exterior of Tanagla in Monterrey, Mexico, to shine with a vibrant red. Courtesy PPG Glass.

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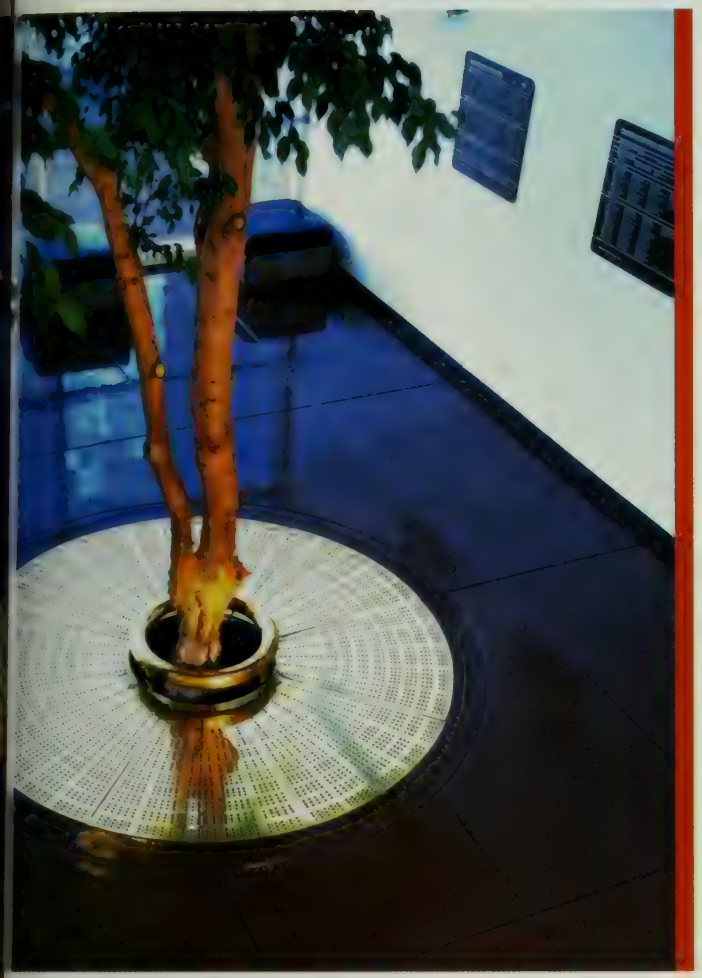
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INSULATION

MANUFACTURED STONE VENEER





Concrete floor in the atrium of the Monsanto Center for Research at the Missouri Botanical Gardens in St. Louis. Courtesy L. M. Scofield.

m real to surreal

LED lighting displays are among the most potentially influential of the new design technologies, says Seattle-based color consultant, and CMG member Leatrice Eiseman, author of *Colors for your Every Mood*.

"It's astonishing to me how many new applications are emerging incorporating LED lighting since it was incorporated into the (Ellerbe Becket-designed) Target headquarters building in downtown Minneapolis," Eiseman says.

"The luminescence LEDs provide, especially now that the color blue has crept from the automotive industry to more general uses, is captivating," she says.

"In health care, we are seeing designers using special effects and colors in a variety of new ways," says de Sibour. "The new children's wings are incorporating interactive materials: thermochromatics that change color with touch, reticulars and holograms. We have taken an intimidating environment and made it enjoyable, distracting, interactive. Pediatric health care has become a playground.

"Look at the use of interference colors," he says. "We've seen metallic cars with colors that change for a long time. Now we're seeing that move into kitchen appliances and table tops."

At this summers NEOCON World's Trade Fair, the hit of the show was a yet-to-be-released, color-shifting, hologram-like surface that can appear violet from one angle, a silvery blue from another.

But what makes the product—due to be available in 2005—especially appealing, says Tony Sain, Lonseal, Inc., is a UV surface finish that gives the line its name and which makes the flooring as easy to clean as wiping a whiteboard clean.

The ease of maintenance, Sain says, is achieved by applying a 100-micron-thick, UV-cured, urethane wear layer on top of the traditional PVC wear layer used by nearly all manufacturers. The result, he says, is a "gorgeous, high-design flooring that is also highly durable that can take traffic and from which scuff marks can be wiped away with incredible ease."

The trend toward color-shifting surfaces will become pervasive in the coming year, Sain predicts. "In our industry you also are seeing other innovative applications, especially advances in embossing technology which will have some fascinating new looks."

The flooring in Borruso's Fornarina store in Mandalay Place is another new product, a flooring line with a bumpy texture that some users say feels as though they were walking on "a bed of pearls."

Sain says Lonseal has tested and is considering the launch of a wall-covering line.

"Retail design has become very exciting, and it is pulling other markets along with it," Sain says. "Even institutional design, in reality, is becoming very high design, not just dull gray surfaces anymore, but floors with wood-grain, interiors, overall, that have the look and feel of nature."

Stone, whether natural or cultured, is an attention-getter, the likely focal point of any project.

Stone, whether natural or cultured, is an attention-getter, the likely focal point of any project. The "look" and "feel" of nature was also the goal of early cultured stone manufacture, which has become one of the fastest-growing niche industries in construction. Today, cultured stone is available in dozens of "textures," and more than 120 colors that no longer merely mimic nature, but use it as a starting point for more fantastic creations.

"We started out making replicas of stone that had either grown too expensive to be practical to a wide audience or

became rare because quarries were either depleted or shut down," says Bob Heath, former president of Cultured Stone, now vice president of marketing for Owens Corning's Cultured Stone division.

"But we've evolved way beyond that," says Heath. "Today's new products are designed to meet specific demands for a size and shape and color and go far beyond what is available in nature."

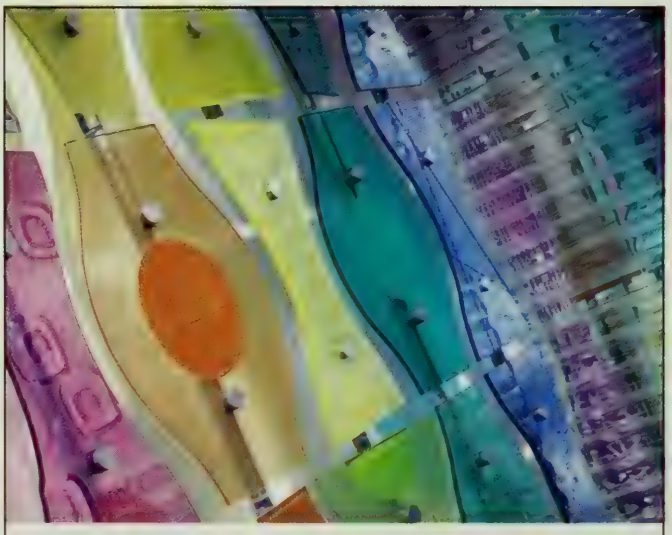
In fact, Owens Corning's two most popular colors are colors that don't exist in any quarry, says Heath. One is a color combination created from a blend of more than a dozen colors and can be blended to match a builder's specific needs. The other, once exclusively a ledgestone, is now available in a variety of textures and a nearly unlimited range of colors. ■

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at:

archrecord.construction.com/resources/conteduc/archives/0408color-1.asp

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LEARNING OBJECTIVES

- *Have a better sense of the trends in color and textures in design.*
- *Know the materials that can be used to achieve desired color and texture.*
- *See the trends in color and texture in various project types.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 246. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com* —to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. Spectrally selective glass generally has a light-to-solar-gain ratio (LSG) of:
 - **a.** .25
 - **b.** .40
 - **c.** 0.75
 - **d.** 1.25 or higher
2. Porcelain tile generally achieves its hardness through use of:
 - **a.** engineered polymers
 - **b.** kiln firing at 980 degrees
 - **c.** kaolin and feldspar
 - **d.** cementitious additives
3. Gensler has sought inspiration for design in:
 - **a.** a study of butterflies
 - **b.** ocean and air currents
 - **c.** both of the above
 - **d.** neither of the above
4. The Material ConneXion says new designs are being created through all but which of the following:
 - **a.** pearlescence
 - **b.** flourescence
 - **c.** iridescence
 - **d.** interference
5. Churches of the 1970s, Lewis Dominy says, were characterized by:
 - **a.** orange colors
 - **b.** a predominance of avocado refrigerators
 - **c.** undersized naves
 - **d.** the absence of pews
6. A distinctive feature of the new Minneapolis Target headquarters is:
 - **a.** faux limestone balustrades
 - **b.** LED lighting
 - **c.** its titanium exterior
 - **d.** Asian marble cladding
7. A new UV line of flooring takes its name from its resistance to ultraviolet rays.
 - **a.** true
 - **b.** false
8. The two most popular colors of cultured stone are:
 - **a.** Berkshire Limestone and Sierra Nevada Redstone
 - **b.** Sangre de Christo Red and Sassuolo Marble
 - **c.** Colors that don't exist in nature
 - **d.** Litho Gray and Allegheny Ash
9. Generally speaking, aggressiveness is associated with what color?
 - **a.** red
 - **b.** pink
 - **c.** black
 - **d.** yellow
10. Ceramic and porcelain tiles are very similar in density.
 - **a.** true
 - **b.** false

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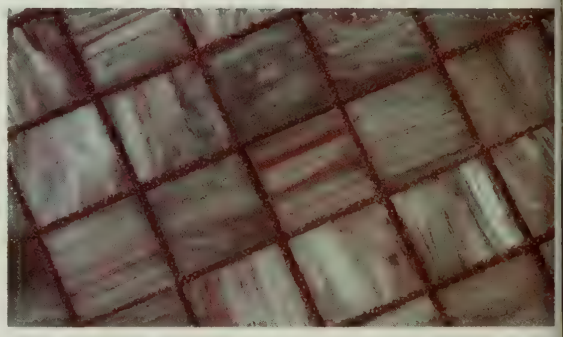
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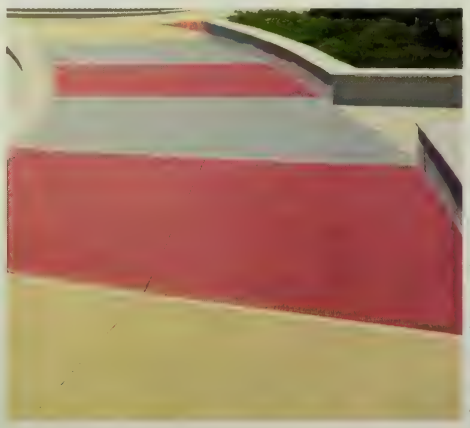
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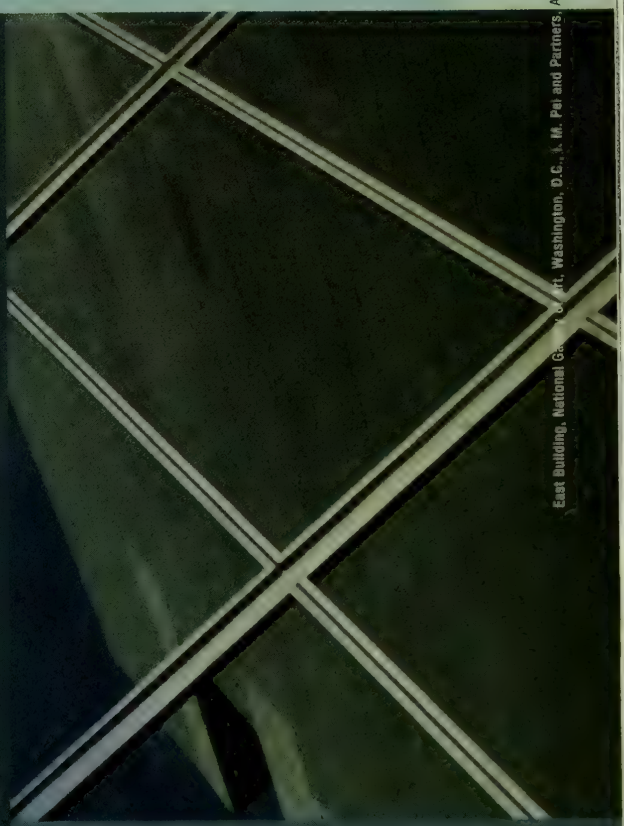
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Environmentally-Friendly Building Strategies Slowly Make Their Way Into Medical Facilities

NEW GUIDELINES HIGHLIGHT THE RELATIONSHIP BETWEEN SUSTAINABLE DESIGN AND HUMAN HEALTH

By Nancy B. Solomon, AIA



Children's Hospital of Pittsburgh (above), designed locally by the architecture firm Astorino, includes a vast garden (below). It is one of a few health-care facilities in the U.S. seeking a high LEED rating.

First, do no harm." This has been the motto of the medical profession since Hippocrates. Yet, over the past few decades, it began to appear as if the purchasing habits, facility operations, and, ultimately, building design standards of this sector might not always be consistent with its own professed values. While practitioners may be providing state-of-the-art medical treatment to the sick, some of their products, systems, and structures may be compromising the overall health of their patients, staff, and outlying community.

The warning signs came as early as the 1980s, when used syringes washed up on Long Island and New Jersey beaches. Because of fears of infectious-disease transmission, medical waste soon began to be segregated and burned. But in 1996, the U.S. Environmental Protection Agency (EPA) deemed incineration of medical waste to be the largest contributor of dioxin, a potent carcinogen, into the environment. The incinerators also released mercury, another serious threat to public health. In response to the incineration problem, Health Care Without Harm (www.noharm.org), a coalition of health-care, environmental, and community groups, was formed at this time to work toward reducing the industry's environmental impact. Due to stronger EPA pollution controls, most medical-waste incinerators have since ceased operation. Hospitals also began to look at other ways to minimize toxins and waste. In 1998, for example, EPA, in conjunction with the American Hospital Association (www.aha.org), began a program called "Hospitals for a Healthy Environment" to encourage the phasing out of mercury—from thermometers to fluorescent lamps—in health-care facilities by 2005 and the cutting of health-care waste by 50 percent by 2010.

Despite—or perhaps because of—these serious operational and purchasing concerns and subsequent large-scale initiatives, "health care is way behind the curve" when it comes to sustainable building design, reports Carol Antle, director of capital planning for Northern California for Kaiser Permanente in Oakland, California. With its own department of environmental stewardship, Kaiser has been trying to push the industry's sustainable-design envelope.



The reasons for this are many. Health-care architect Robin Guenther, AIA, of Guenther5 Architects in New York, cites, among other causes, the size of the "environmental footprint" facing medical facilities. "Health care was not ready to go after the building until it got those other aspects, such as medical waste and mercury, in order," she says.

Cost is also critical. In health care, very few building projects are adequately funded from the start, so there is always fierce competition for scarce capi-

Nancy B. Solomon, AIA, writes frequently about architectural technology.

CONTINUING EDUCATION

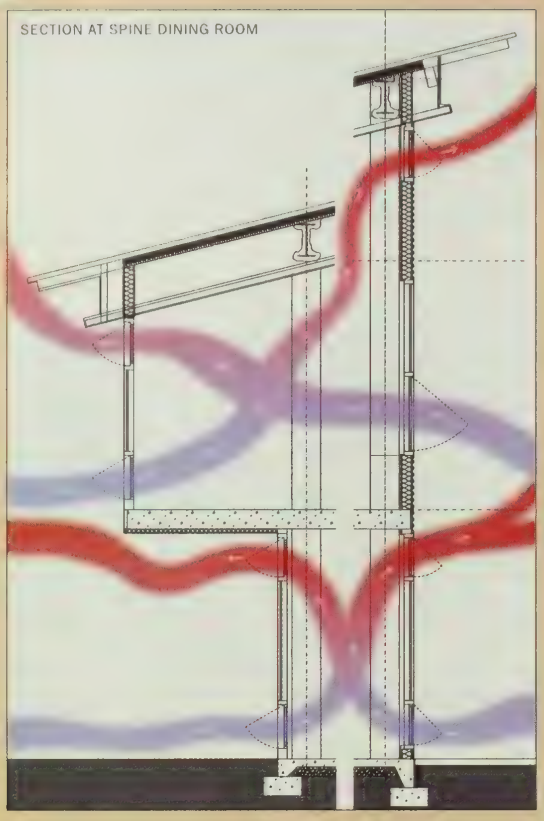
Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 188 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include the following sponsored sections: "From Translucent to Opaque: Accessing the Unique Design Dynamics of Glass Block," sponsored by Pittsburgh Corning, page 193; and "Color and Texture," multi-sponsored, page 154.

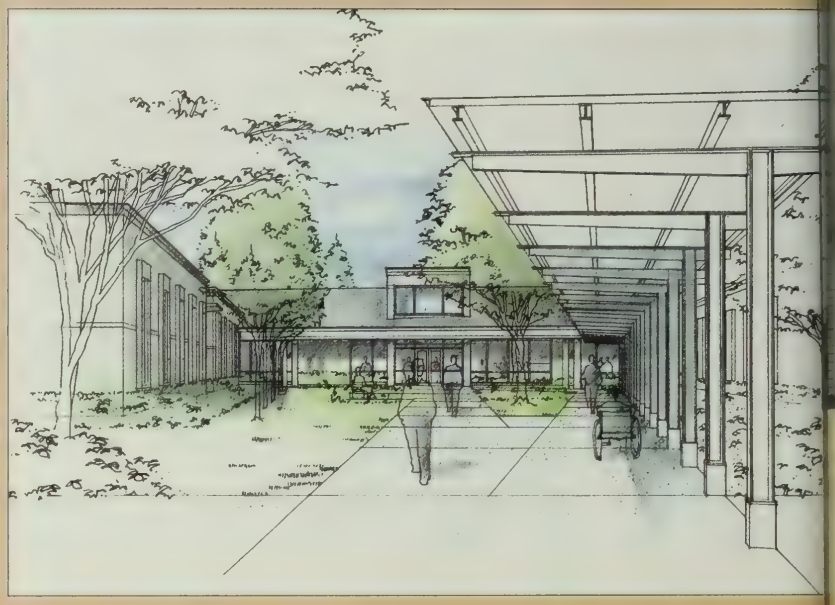
LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Describe the differing requirements of health-care and office buildings.*
2. *Explain the Green Guidelines for Healthcare Construction (GGHC).*
3. *List additional strategies for achieving environmental credits under GGHC.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **www.architecturalrecord.com**.





Veterans Skilled Nursing Facility, Retsil, Washington

NBBJ designed ceilings that are 12 feet 4 inches tall to provide ample room for an interior convective current to develop (diagram, left): Hot air rises, is cooled by the precast-concrete planks, and then drops back down. The high ceilings also allow for 8-foot-high, double-hung windows along one wall of each bedroom. Low-emissivity coated glass and installed interior roller shades reduce solar heat gain. Different types of exterior shading devices address particular solar conditions at various facade orientations.

tal dollars. There is a perception, although not always true, that sustainable strategies cost more up front. The fact that they may save money over the life of the building doesn't always sway decision makers: "If it's a trade-off between keeping the surgeon or the building-operations staff happy, the surgeon is going to win. Green initiatives can be vulnerable," explains Guenther.

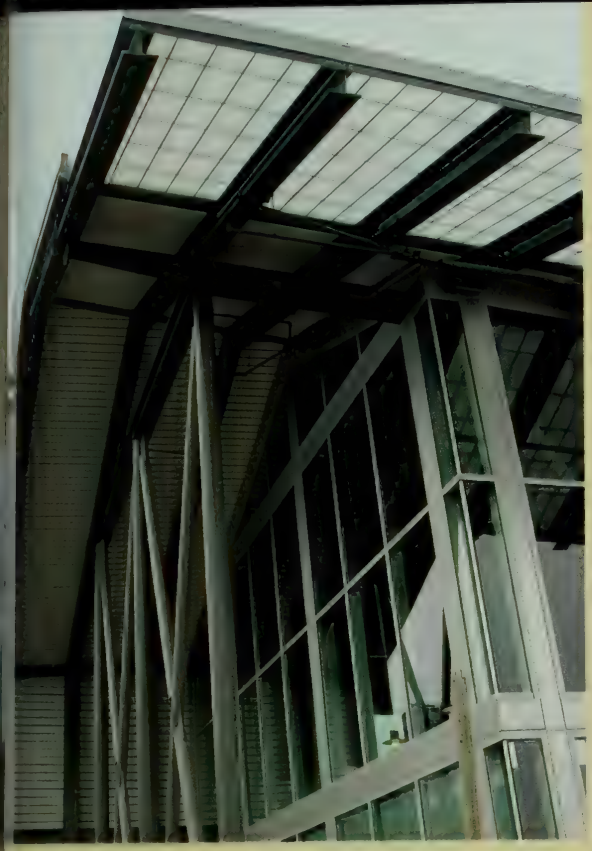
Medical facilities are also highly regulated, so some hospital administrators and designers fear that environmental goals will become another layer of bureaucracy in a complex industry that is already burdened by many requirements.

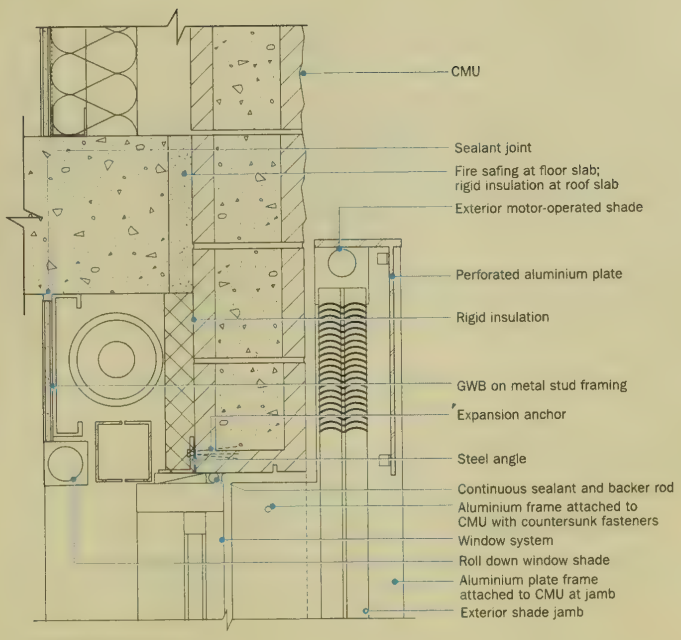
In addition, the first version of the most popular rating system for sustainable design, the U.S. Green Building Council's (USGBC) Leadership in Energy & Environmental Design (LEED), was tailored to commercial construction, not health-care facilities. But hospitals, in particular, differ greatly from standard office buildings: They run day and night, seven days a week. They require multiple adjacencies, which traditionally necessitates compact floor plates. They require habitable spaces for procedures that would be adversely affected by natural light. They have to accommodate large equipment in significant quantities. And they need more frequent air changes and more rigorous cleaning procedures to prevent the spread of infection. In one way or another, these and many other health-care-specific conditions affect how well the facility can achieve typical sustainable goals.

There are signs, however, that all this is beginning to change. Despite the admitted incongruity, 29 projects have now registered with LEED in the health-care category (including the Patrick H. Dollard Discovery Health Center, in Harris, New York, and Washington State Veterans Home Skilled Nursing Facility, in Retsil, Washington, described on these pages), as compared to none in 2000 when the rating system was introduced, and one hospital (Boulder Community Foothills Hospital, page 184) has already been certified at the silver level. "Overall, there is an enormous interest in sustainability within the health-care industry. And the interest is growing exponentially," observes Guenther.

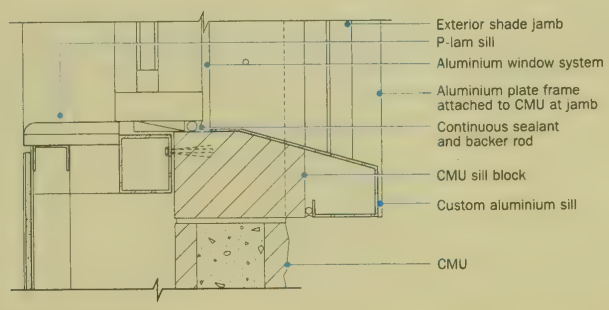
DESPITE THE ADMITTED INCONGRUITY, 29 PROJECTS HAVE NOW REGISTERED WITH LEED IN THE HEALTH-CARE CATEGORY.

Even more promising is the soon-to-be released Green Guidelines for Healthcare Construction (GGHC). Developed by a committee under the auspices of the American Society for Healthcare Engineering (ASHE), an affiliate of American Hospital Association, these guidelines address sustainable criteria specific to health care. Gail Vittori, codirector of the Center for Maximum Potential Building Systems, in





RESIDENT WINDOW HEAD



RESIDENT WINDOW SILL

Austin, Texas, chaired the group of sustainable and health-care experts from around the country. The organization of the Green Guidelines follows very closely that of LEED for New Construction: It is divided into similar environmental categories, each of which has a few prerequisites plus a variety of strategies for credit.

But it is at the level of the strategies themselves that one begins to appreciate the differences. Some of the GGHC (www.gghc.org) categories include additional prerequisites. For example, "mercury elimination" is required in the "Materials & Resources" category and "asbestos removal or encapsulation" is necessary in "Environmental Quality," reflecting the fact that existing medical facilities have potentially harmful materials that need to be either removed or contained.

All categories have additional strategies: "Connection to the natural world," for example, has been added under "Sustainable Sites" to acknowledge the important role nature plays in healing. "Process water efficiency" has been inserted under "Water Efficiency" to reflect the fact that hospitals rely on nonpotable water in much larger quantities than potable water within the building itself. "Electronic purchasing and take back" has been included under "Materials & Resources" to encourage the recycling of hardware rather than allow equipment to enter the waste stream. And the elimination of "asthma triggers, formaldehyde, phthalates, and natural rubber latex" has been added as one of the credits for "low-emitting materials" within "Environmental Quality," highlighting the sensitivity health care has to people with compromised immune systems.

And some credits have been adjusted to more accurately reflect the realities of health care. For example, in "Energy & Atmosphere," GGHC gives credit for supplying 1 percent, 2 percent, or 5 percent of the total energy consumed with renewable sources, rather than the 5 percent, 10 percent, or 20 percent minimums stipulated by LEED, because health-care buildings are so energy-intensive. The Green Guidelines has also expanded the detailed descriptions of the credits. Most striking is the insertion of "Health Issues," which emphasizes the strong connections among ecological health, human health, and the built environment.

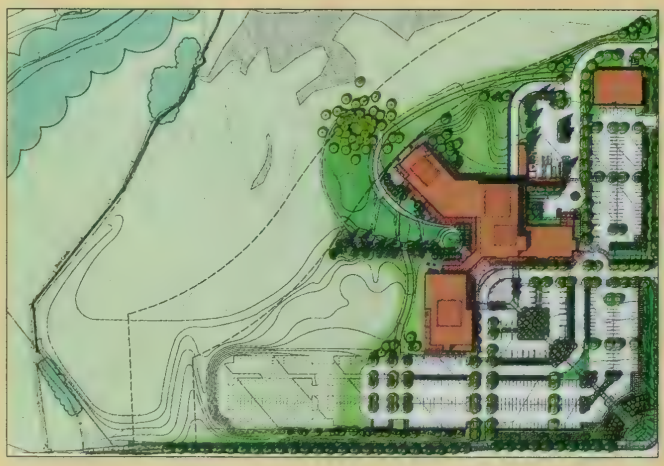
A voluntary, self-certifying system, GGHC could never serve the same role as does the LEED system of third-party certification. But its health-based approach adds a rich layer of information to the original LEED structure. "We wanted to be explicit that all of these strategies have health implications," explains Vittori. "It's a product that puts human health front and center." In doing so, ASHE believes the health-care industry will be even more motivated to provide high-performance healing environments to complement its high-performance medicine. Perhaps equally important, such an emphasis on the health-based benefits of sustainable solutions promises to advance the entire sustainable-design movement in all sectors of construction.

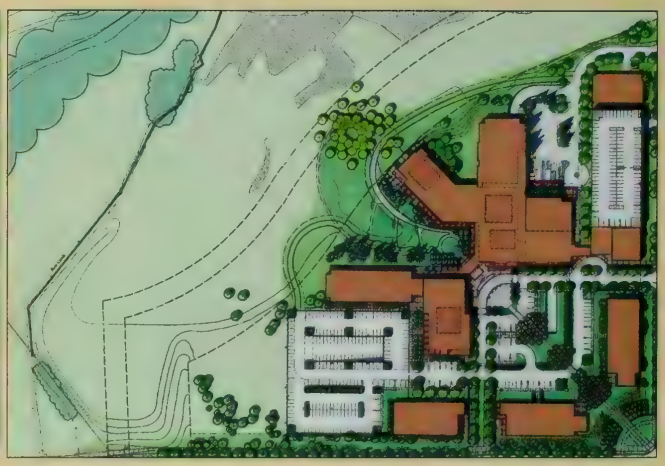




Boulder Community Foothills Hospital, Boulder, Colorado

Boulder Associates and Oz Architecture minimized the amount of water needed for exterior use, in large part by specifying plantings that are native to Colorado (above) and other semiarid regions. Fifty-five percent of all building materials were manufactured locally, of which more than half were also harvested locally. A master plan for the existing 49-acre greenfield site (below left) emphasized car-pooling, thus reducing paving to 75 percent of the parking area normally required (below right).





Last spring, spurred on by the groundwork already laid by the draft version of the Green Guidelines, USGBC established a committee, also chaired by Vittori, to develop a LEED Application Guide for Healthcare. GGHC will be a reference document in this process. According to USGBC, this guide will be available by next summer.

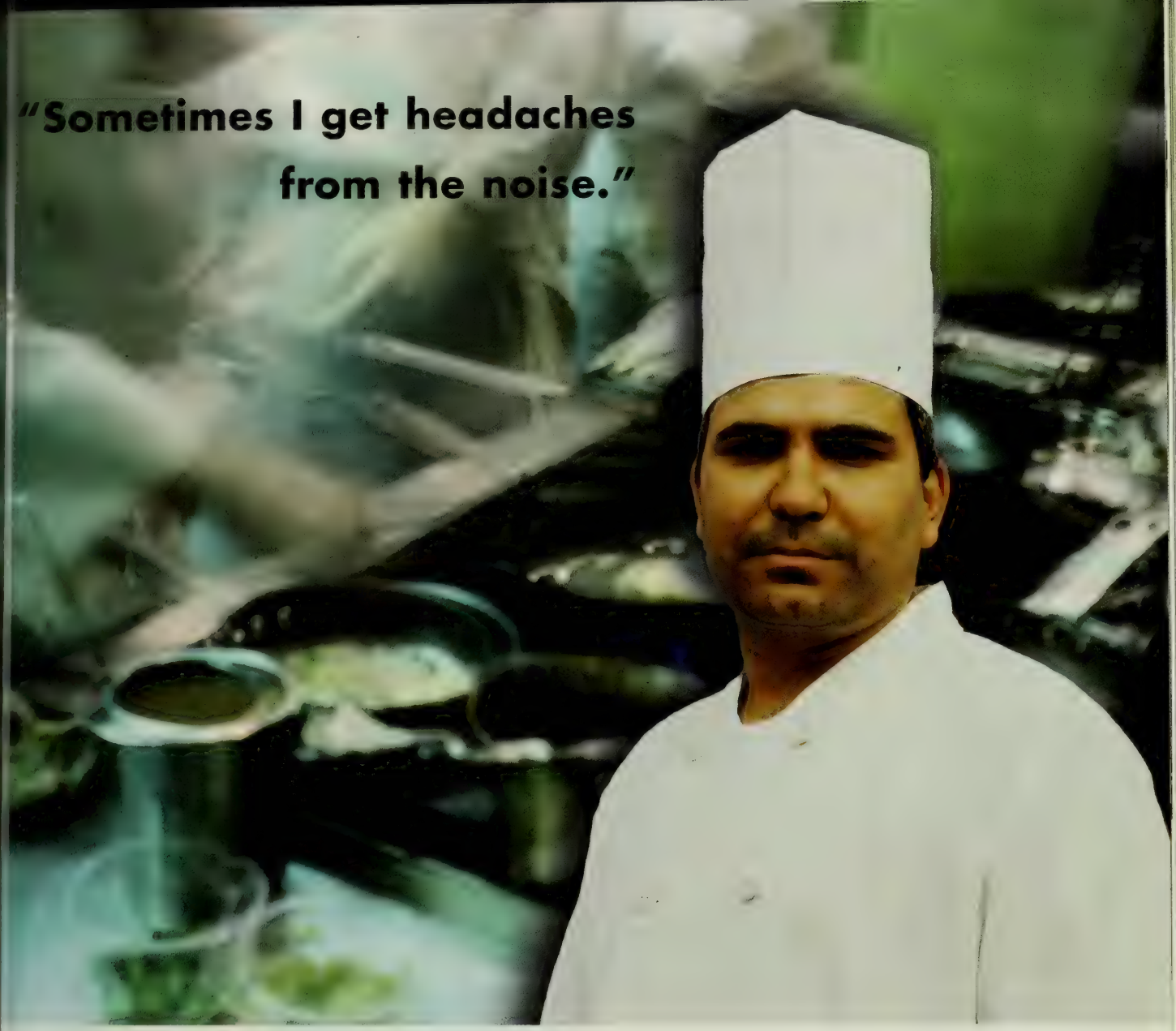
Thermal comfort

When the Washington State Department of Veterans Affairs first approached Seattle-based NBBJ regarding a replacement skilled nursing facility on its existing campus in Retsil, Washington, the agency wasn't focused on sustainable design. The department simply wanted a high-quality structure that would provide the best care. To this end, the client and architecture firm undertook strategic planning sessions with current residents to elicit what they really needed. The overarching themes that emerged were dignity, privacy, and a greater sense of control over their lives. "They wanted to be able to make individual choices, such as operating windows," explains NBBJ project manager Elizabeth Jacks. They didn't want air-conditioning, as it made them feel cold.

So, when the design team began to assess site conditions, the concept of natural cooling logically arose. After all, the campus is located in a mild climate atop a bluff next to Sinclair Inlet. Breezes coming across the water assure a constant flow of cool air all year round. What better way to give the residents more control over their environment and a connection to the outside world then by allowing them to tap into this natural resource as they saw fit?

There was, however, one glitch: All health-care facilities in the state of Washington must meet the Washington Administrative Code (WAC 388-97), which references ASHRAE 55. This standard requires mechanical cooling—regardless of microclimate—and stipulates that all patient areas must not exceed 75 degrees for 97.5 percent of the year. Although ASHRAE is now working on a standard for natural ventilation, and LEED has a much different understanding of the acceptable range of thermal comfort, the designers had to work with the code as it now stands.

NBBJ accepted the dual challenge of first meeting the temperature requirements—which far exceed LEED standards—with passive-solar strategies and then demonstrating that such a solution satisfied the intent



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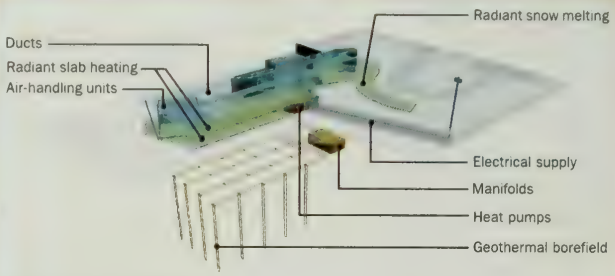
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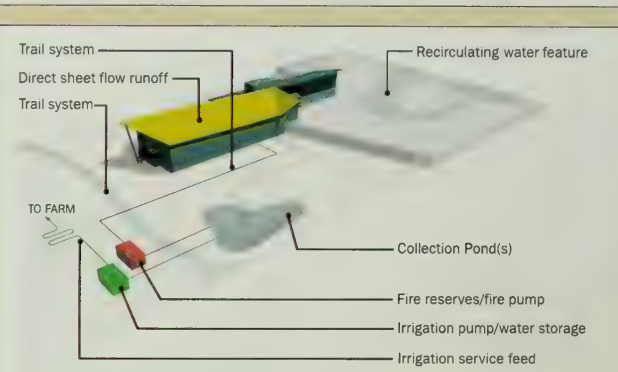
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ALTERNATIVE ENERGY DIAGRAM
(Ground source heat pumps with integrated systems)



SITE RESTORATION DIAGRAM
(Stream flow management)

Patrick H. Dollard Discovery Health Center, Harris, New York

Guenther5 Architects incorporated many sustainable strategies, including testing nonchlorinated plastic floor tiles in another building to determine ahead of time how the product would perform on radiant slabs. The ground-source heat-pump system was the only energy-reduction strategy that had a measurable effect on the overall cost. The building uses about 25 percent less energy than does a standard facility of this type, resulting in savings of approximately $18,000 to $20,000 per year (diagrams, right).



of the health-care code. Both the design and the final proof relied heavily on computer modeling of thermal conditions.

The facility consists of eight residential wings, one administrative wing, and a two-story connecting spine containing various communal functions. Cooling throughout the facility depends on the careful orchestration of various elements, including concrete structural systems for thermal mass, generous floor-to-ceiling heights, well-conceived window designs and placements, high-performance glazing, and appropriate shading devices.

The team did not eschew all mechanical systems: The building, for example, is heated with a two-pipe hydronic baseboard system and has a minimal ducted mechanical ventilation system to meet basic health standards. Feeding building geometries, solar angles, actual daily temperatures, and other data into a thermal modeling program, the mechanical engineers painstakingly demonstrated, room-by-room, that the temperature would not exceed the WAC threshold. Both the client and design team clearly had faith in their strategies, as the construction-document phase was 90 percent complete, early site work had begun, and key components were being bid out when the natural ventilation exemption was finally granted by the Washington Department of Social and Health Services.

According to Carl R. Tully, AIA, senior associate at NBBJ, the additional up-front costs associated with the design and construction of this passive cooling system are partly offset by the reduction in mechanical equipment. He estimates that the remaining costs will be paid back by operational savings in eight to 10 years. Scheduled for completion in January 2005, the 170,000-square-foot, 240-bed skilled nursing facility is aiming for LEED certification at the silver level.

Treading lightly on the land

The Boulder Community Foothills Hospital is a new medical center for women and children on the outskirts of Boulder, Colorado. The facility,

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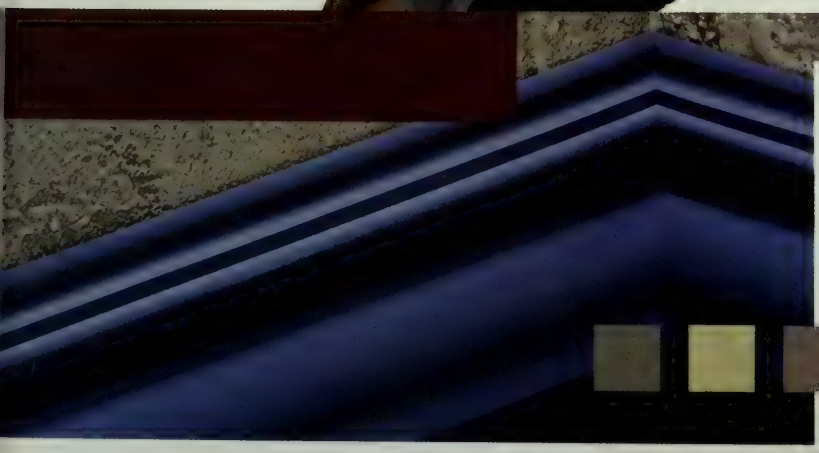
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At the Discovery Health Center, rainwater flows into a trough (above), which is both an irrigation system and a holding tank for the fire-suppression system.

which currently includes a 154,000-square-foot, 60-bed hospital and a 67,000-square-foot outpatient-services building, opened its doors in September 2003. The first hospital to receive LEED certification, it was awarded a silver rating by the U.S. Green Building Council in December 2003 and received an honorable mention in the 2004 ASHE/AIA Vista Sustainable Building Awards program.

The board of directors of Boulder Community Hospital, which has been centrally located in the city for decades but began expanding in the 1980s with satellite campuses to serve an ever-growing suburban population, knew they wanted a green building when they hired the design team. City government and a few local organizations had already undertaken environmentally-friendly construction programs, and the hospital administrators felt that they should, too. Oz Architecture handled the core and shell of the building, while Boulder Associates was responsible for the medical architecture. Both firms are based in Boulder.

Although the 49-acre site was a greenfield—"it was the only property still available in Boulder that could accommodate such a facility," explains Kristi Ennis, AIA, sustainable design director at Boulder Associates—the client pursued many other sustainable site strategies, including designating 32 acres of the campus as permanent open space.

Alternative transportation was emphasized. "The regional transit system is quite good," explains Ennis, "and the client already participated in its annual bus-pass program, which allows all employees to ride free at any time." The hospital invested in the construction and maintenance of a new bus stop, which the city's transit department initially dismissed as unnecessary but soon took over its upkeep when it became evident that the shelter was well used. The designers also encouraged employees to share rides by designating parking spaces for car pools, and to either bike or walk by installing bike racks, showers, and changing facilities. Such strategies, in addition to the hospital's current parking practices at its downtown campus, convinced the city to grant a deferred parking waiver at the new campus. This meant that the hospital only had to pave 75 percent of the parking area normally required, although it also had to set aside sufficient space for the additional parking in case it is ever needed in the future.

In terms of material selection, the architects aimed for multiple environmental goals. With the exception of mechanical and electrical components, 55 percent of all building materials were manufactured locally, of which more than half were also harvested locally. In terms of materials with either postconsumer or postindustrial recycled content, the architects significantly exceeded the amount suggested by LEED. And, although admittedly a challenge, they were able to identify low-VOC and formaldehyde-free products that also satisfied standard hospital requirements, such as high durability and easy cleaning.

The design team minimized the amount of water needed for exterior use, in large part by specifying plantings that are native to Colorado and other semiarid regions. As a result, the landscape design is expected to consume 50 percent less water than is typical of such campuses in the state.

Reduction of potable-water usage on the interior was more challenging, a common problem in health-care environments. Ennis explains that some alternative technologies, such as composting toilets, just do not seem appropriate for this building type. And in some situations, the staff can't accept certain limitations. The postpartum nurses, for example, did not want an electric eye controlling a faucet where they were going to bathe newborns because they needed full control of water quantity and temperature. The design team did install waterless urinals and electric-eye faucets in the public-toilet rooms, but they couldn't achieve LEED's recommendation of at least a 20 percent reduction in overall interior potable-water use in comparison to levels stipulated by the 1992 Energy Policy Act. Ennis adds that state laws governing water rights in Colorado made that goal even more difficult to meet in this particular project.

A highly efficient central utility plant was built not just for the new hospital and outpatient building but also for additional development planned for the campus. Variable speed pumps and variable frequency drives ensure that energy needed to operate the heating and cooling systems are a function of actual demand. Many other energy-efficient components—from roof overhangs to occupancy sensors—were also incorporated. And the building was fully commissioned by a third-party agent to assure that all systems were running as intended. Based on calculations by DOE-2 software, the project uses 27.6 percent less energy than a building compliant with ASHRAE 90.1-1999.

REDUCTION OF POTABLE-WATER USAGE ON THE INTERIOR WAS MORE CHALLENGING, A COMMON PROBLEM IN HEALTH-CARE ENVIRONMENTS.

Health and the health-care environment

Established in 1948, the Center for Discovery is a not-for-profit health-care agency serving children and adults with severe and multiple disabilities. It provides a holistic range of therapies and educational opportunities to this population on two adjacent residential campuses near the Catskill Mountains in upstate New York. About 220 children and adults live on-site, another 60 adults live in nearby community residences run by the center, and about 500 people from the greater community take advantage of its day programs and services.



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Yet until recently, the center lacked a centralized clinic that could address all primary medical needs. Basic services were scattered across its properties, and many routine diagnostic and treatment procedures could only be obtained off-site. Transporting disabled residents—many of whom are confined to wheelchairs—as far away as Manhattan was inconvenient for the staff and stressful for the patients.

So, in 2000, Executive Director Patrick H. Dollard engaged Guenther5 Architects of New York in the design of an on-site ambulatory clinic. He didn't request a green building, but health-care architect Robin Guenther, AIA, who had been researching healthy materials for years and had recently been exploring geothermal heating systems, inquired if the center would consider alternative energy. The existing buildings ran off oil, but, says Guenther, "it was a year when everyone thought that oil prices were going to skyrocket." Needless to say, the client was intrigued. "So we started with energy," explains Guenther.

Incrementally, the design team began raising other environmental goals—from nontoxic materials to water-efficiency. It wasn't long before the executive director recognized that sustainable design was consistent with the organization's core values. The center had long believed that the environment contributed to the health of its patients, explains Guenther, but "the administrators had never really put it all together until the design of this building." With this new realization, the executive director decided that the proposed clinic should register with LEED, thus becoming the first health-care project ever to do so.

In health care, however, the client is not the only one who has to be convinced: The designs for Discovery Health Center had to be reviewed by New York State's Department of Health to ensure that the facility would meet the more stringent life-safety codes required for medical facilities and to receive approval for the cost of construction, which is governed in large part by reimbursement rates within the state.

According to Guenther, the Department of Health was concerned about establishing a statewide precedent for construction cost premiums for green features, so it undertook a rigorous financial review. The department initially rejected the idea of a geothermal system, despite the fact that it would pay for itself in 10 to12 years, because the technology would increase the total cost by almost 2 percent. Fortunately, New York State Energy Research and Development Authority offered a grant that reduced the premium to less than 1 percent, thereby shortening the payback period to a standard 3-to-5-year time frame.

The ground-source heat-pump system was the only energy-reduction strategy that had a measurable effect on the overall cost of construction. Energy savings were also achieved through a highly insulated building envelope, solar shading and daylighting techniques, and high-efficiency motors, fixtures, and lighting controls. The building uses about 25 percent less energy than does a standard facility of this type, resulting in operational savings of approximately $18,000 to $20,000 per year at current energy costs.

The 28,000-square-foot Patrick H. Dollard Discovery Health Center opened in April 2003. That same year, it became the first recipient of the Vista Sustainable Building Award, a program run by ASHE in conjunction with AIA's Academy of Architecture for Health. The firm is currently seeking LEED certification. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- **Read the article "Environmentally-Friendly Building Strategies Slowly Make Their Way Into Medical Facilities" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers (page 244).**
- **Fill out and submit the AIA/CES education reporting form (page 244) or download the form at www.architecturalrecord.com to receive one AIA learning unit.**

QUESTIONS

1. Which design feature is good for office buildings, but not hospitals?
- **a.** frequent air changes
- **b.** compact floor plates
- **c.** natural light
- **d.** accommodation for large equipment

2. Which is a requirement for medical facilities regarding Materials & Resources?
- **a.** electronic purchasing and take back
- **b.** elimination of formaldehyde
- **c.** efficient water processing
- **d.** mercury elimination

3. Which is a requirement for medical facilities for Environmental Quality?
- **a.** mercury elimination
- **b.** asbestos removal or encapsulation
- **c.** efficient water processing
- **d.** electronic purchasing and take back

4. Which is a credit strategy for medical facilities under Sustainable Sites?
- **a.** electronic purchasing and take back
- **b.** connection to the natural world
- **c.** elimination of formaldehyde
- **d.** efficient water processing

5. Which is a credit strategy for medical facilities under Materials & Resources?
- **a.** electronic purchasing and take back
- **b.** elimination of formaldehyde
- **c.** connection to the real world
- **d.** efficient water processing

6. Which is a credit strategy for medical facilities under Environmental Quality?
- **a.** efficient water processing
- **b.** elimination of formaldehyde
- **c.** connection to the natural world
- **d.** mercury elimination

7. The connection between ecological and human health and the built environment is emphasized by the insertion of which category?
- **a.** Energy & Atmosphere
- **b.** Environmental Quality
- **c.** Sustainable Sites
- **d.** Health Issues

8. The issue of energy was a major concern in which project?
- **a.** Dollard Discovery Health Center
- **b.** Washington VA Skilled Nursing Facility
- **c.** Boulder Community Foothills Hospital
- **d.** U.S Green Building Council

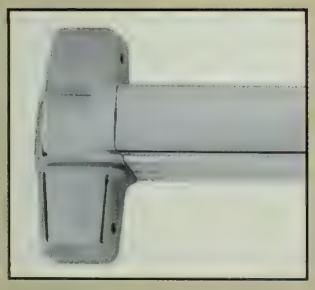
9. Transportation was a major concern in which project?
- **a.** Dollard Discovery Health Center
- **b.** Washington VA Skilled Nursing Facility
- **c.** Boulder Community Foothills Hospital
- **d.** U.S Green Building Council

10. Operational windows was a major concern in which project?
- **a.** Dollard Discovery Health Center
- **b.** Washington VA Skilled Nursing Facility
- **c.** Boulder Community Foothills Hospital
- **d.** U.S Green Building Council

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Tech Briefs

Studies of their health impact heat up debate over halogenated flame retardants

Concerns about the health and environmental effects of halogenated flame retardants, which are used in building materials, furniture, textiles, and electronics, have recently prompted calls for the compounds' phaseout.

Halogenated flame retardants, which contain bromine and chlorine—elements that are useful in suppressing fires—have been found to cause neurological, developmental, and reproductive damage, as well as other illnesses, in lab animals, and to persist in the environment. Recently, researchers have zeroed in on a class of flame retardants known as polybrominated diphenyl ethers (PBDEs), as a number of international studies by academic and government institutions have noted increasing levels of PBDEs in human breast milk. Of the various classes of PBDEs on the market, pentaBDE is commonly used in furniture and carpeting, octaBDE in electronics, and decaBDE—the top form produced in the U.S.—in electronics and textiles.

In the June 2004 issue of *Environmental Building News* (*EBN*), a newsletter published by BuildingGreen of Brattleboro, Vermont, executive editor Alex Wilson argued that the potential health and environmental damage caused by PBDEs and related chemicals warrant their elimination from the design, construction, and furnishing of buildings. "In looking at their history, I was astounded to find that one whole class of compounds had been banned in the 1970s, yet we didn't even consider that the replacement compounds might be quite similar chemically and toxicologically," he said in a phone interview. Wilson's editorial highlighted the hazards of PBDEs, and went on to caution that all halogenated flame retardants should be avoided pending rigorous life-cycle toxicity testing and proof of safety.

Growing body of evidence

Some furniture companies, in line with earlier commitments to sustainable design, have already begun seeking alternatives. Herman Miller and Interface have pledged to eliminate halogenated flame retardants from their products. In 2002, Steelcase wrote PBDE flame retardants out of its design standards for new products, and is weeding penta- and octaBDEs out of its product line, according to a company spokeswoman. Several furniture manufacturers are also participating in an EPA-led initiative to identify environmentally safe flame retardants. "It's a very complex topic, and it's important to do the right thing [on the basis of] valid information," said Randy Carter, Steelcase's principal engineer for codes and approvals.

Regulators in the U.S. and Europe have stepped into the fray. The European Union has called for eliminating penta- and octaBDE, as have California and Maine, and New York is reportedly weighing restrictions on PBDEs as well. *EBN*'s Wilson notes that European fire-safety codes consider the toxicity of retardants, whereas U.S. codes don't. When EPA announced last November the voluntary phaseout of penta- and octaBDE by the Great Lakes Chemical Corporation (the only U.S. producer of the compounds), the agency issued a statement acknowledging that "there is growing evidence that the PBDE chemicals bioaccumulate and are persistent in the environment," and called for further study, but noted that the agency "has not concluded that PBDEs pose an unreasonable risk to human health or the environment."





In the future, Herman Miller's Eames lounge chair and ottoman (above) will use fabric free of PBDEs. These and other halogenated flame retardants have come under increasing scrutiny for negative health effects.

The U.S. Green Building Council has yet to address halogenated flame retardants in its LEED rating system, although the group is open to pursuing the issue, according to vice president and LEED program director Nigel Howard.

Trade groups, however, maintain that PBDEs have not been proven hazardous as a group. "BuildingGreen's position is kind of a whitewash, because it doesn't differentiate between types of PBDEs," said Peter O'Toole, U.S. program director for the Bromine Science and Environmental Forum, a chemical industry group. The group has argued that while rising levels of penta- and octaBDE in the environment and in humans bear watching, another form, decaBDE, has yet to be proven unsafe. He cites a recent risk assessment by the European Union, and findings by the National Academy of Sciences, the Voluntary Children's Chemical Evaluation Program, the World Health Organization, and the U.S. Consumer Products Safety Commission, in making the case for decaBDE's safety. *EBN*'s editorial stated otherwise, citing a recent study from Sweden, among others.

However individual compounds are addressed in the near term, halogenated flame retardants are likely to remain under the microscope. *EBN*'s editors encouraged architects and builders to design in a manner that minimizes the need for flame retardants. Some of the strategies they outlined include encasing plastic-coated wiring in metal conduit, protecting foam insulation with fire-resistant barriers, using sprinklers more extensively, and replacing some plastics in construction with cements, metals, or ceramics. *Ted Smalley Bowen*

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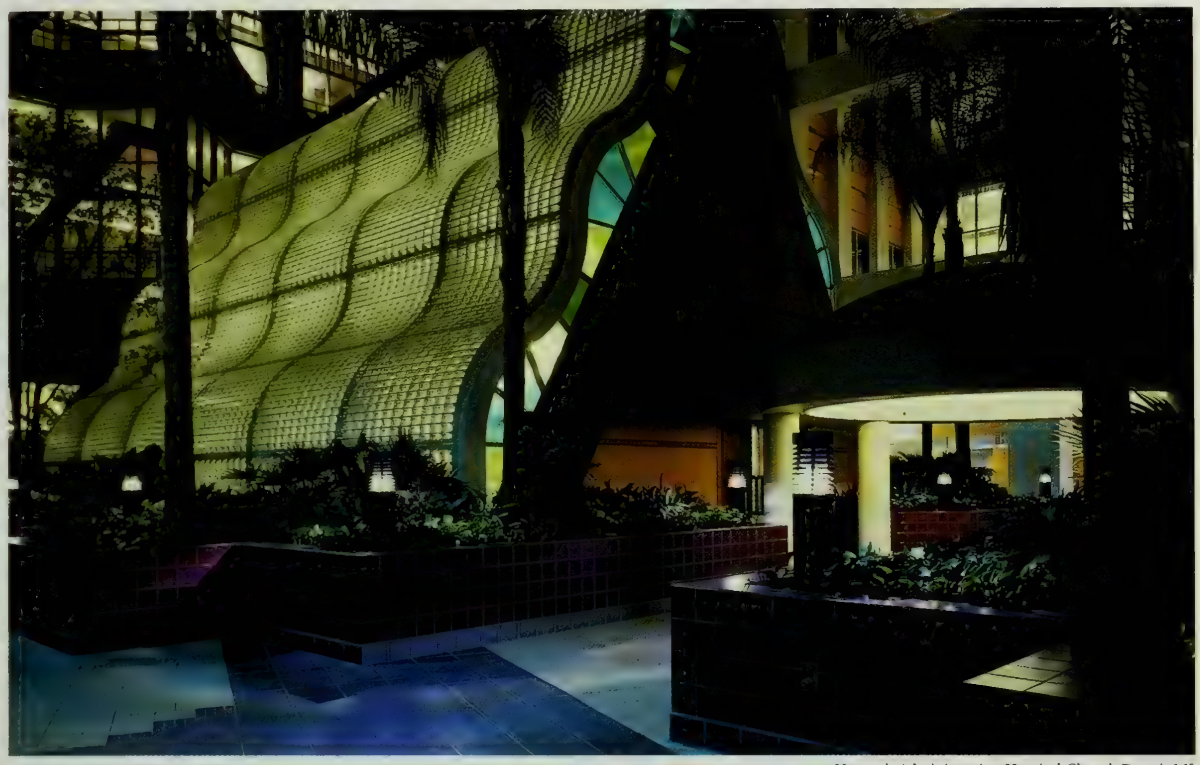
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Veteran's Administration Hospital Chapel, Detroit MI
Architect: Smith, Hinchman & Grylls, Inc.

SBURGH CORNING PRESENTS

From translucent to opaque: Accessing the unique design dynamics of glass block

Glass block is a unique building material. It has a dynamic relationship with light — both natural and artificial. As light changes so do the material's appearance and the surrounding environment. A great range of light and privacy is available depending on the pattern and transparency of the glass block. Used creatively, this building material can produce dramatic aesthetic effects.

NTINUING EDUCATION

Use the learning objectives below to focus your study as you read **From Translucent to Opaque: Accessing the Unique Design namics of Glass Block.** To earn one AIA/CES Learning it, including one hour of health safety welfare credit, swer the questions on page 197, then follow the report- instructions on page 246 or go to the Continuing ucation section on *archrecord.construction.com* and low the reporting instructions.

ARNING OBJECTIVES

er reading this article, you should be able to:

Identify the structural properties of glass block when used as a building material.

Understand the unique performance abilities of glass block, such as fire resistance, heat and light transmission, sound resistance, vandal resistance, and earthquake resistance.

Grasp some of the economic and aesthetic implications of specifying glass block in specific building projects.

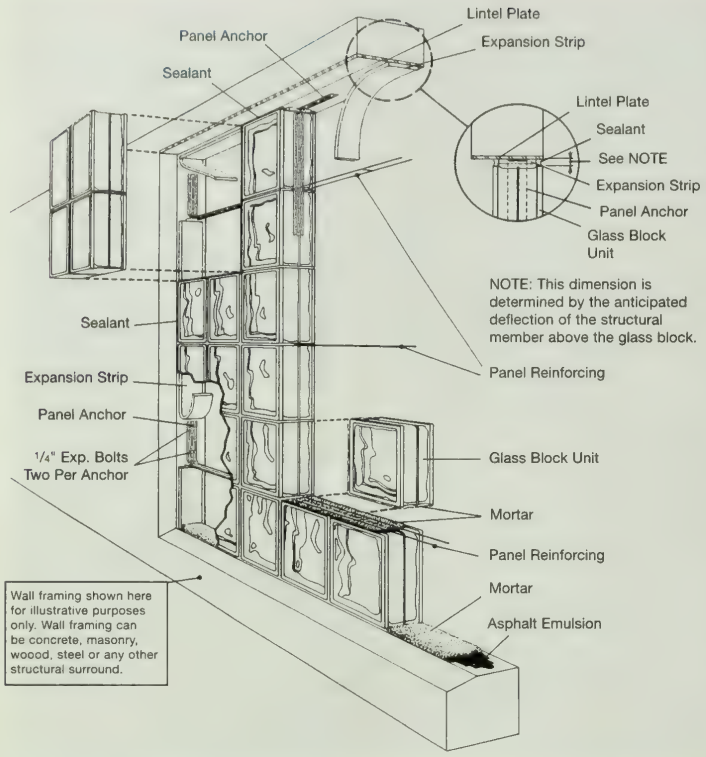
The transparency of light depends on the pattern, type, and size of glass block used. The result is maximum light transmission to increasing degrees of privacy, diffraction or refraction. Even with the most opaque block, or using glass blocks as accent pieces, the result is the same — a visual connection from inside to out, or connecting to inside spaces. This sensory stimulant offers more than just aesthetics — it is considered a necessary component of a psychological and physiological healthful living and working environment. This brick made of glass also provides energy efficiencies, sound control, security and even visual texture.

Glass block can be used in residential as well as commercial projects, as non-load bearing walls, windows, or partitions. An astonishing range of applications is possible with a corresponding variety of aesthetic results. Consider some interior uses: as a contemporary shower stall, a kitchen island, a backsplash in the kitchen, or as the sidelights at the front door. Yet, before building aesthetics and even design can be considered, it is crucial to become familiar with the technical properties of glass block. Working with glass block requires a certain level of skill and a thorough understanding of the material.

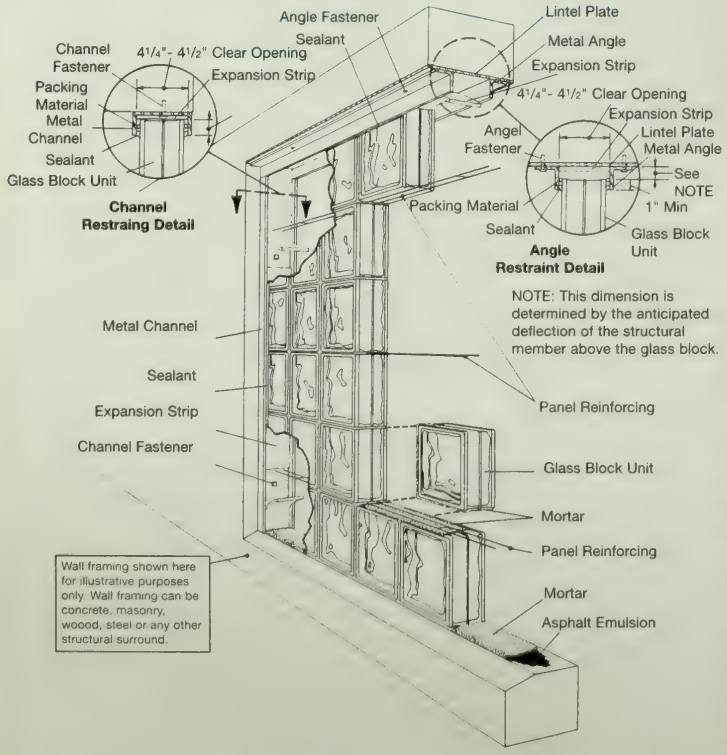
Structural properties

Glass block is manufactured through a simple, yet exacting process. Silica sand, soda ash, and limestone are mixed and melted in tanks heated to 2,300 degrees Fahrenheit. From those tanks a precise amount of molten glass is poured into a half-block mold. Two halves are sealed together, creating a partial vacuum within the unit, and then fed into an oven to slowly cool and, in the process, strengthen. This is the annealing process. Each block is then treated with a special edge coating of polyvinyl butyral to increase mortar bond and allow for expansion and contraction. Each block is tested for clarity and consistency.

Panel Anchor Construction



Channel-Type Restraint Construction



The unit can be hollow or solid and come in a variety of sizes, shapes, pattern and textures. The most commonly used units are square (6-, 8-, or 12-inch sizes Rectangular units (4x8-inch and 6x8-inch) are also available, as are bull-nosed edge blocks for finishing horizontal and vertical panels, and various corner an angular blocks.

What makes the choice of block all the more complex — and delightful — is the wide range of patterns. Clear block with its smooth face offers high visibility and light transmission. Wavy and fluted patterns allow for moderate levels of visual privacy while maintaining high light levels. Even greater privacy comes with stippled, diamond, and tightly ribbed designs. Fibrous glass inserts are also available to provide maximum privacy and further temper light and heat transmission.

Generally, two thicknesses are available. The standard 3 7/8-inch glass block includes the largest selection of patterns, sizes and shapes. Each 3 7/8-inch thick glass block is designed to provide stability and durability, as well as high insulation values, sound transmission, and fire resistance ratings. Thinner 3 1/8-inch block is specifically designed for prefabricated panels of limited size, particularly windows.

In exterior applications, maximum wall areas are based on design wind pressure. Twenty pounds per square foot is a commonly accepted value for wind load resistance for wall construction. The maximum area for exterior panels constructed of standard block is 144 square feet, with a maximum height of 20 feet or a maximum width of 25 feet. This panel is designed to withstand a 20 psf wind load — equivalent to about a 78-mph wind — with a 2.7 safety factor. If larger panels are required, horizontal and/or vertical stiffeners or shelf angles and expansion joints need to be incorporated to maintain the maximum areas recommended per component panel. Design of these structural members must be based on the design wind load and to an L/600 deflection (where L equals the distance between supports).

Interior walls are designed to a lateral load of 5 psf. Interior glass panels are permitted to be larger (up to 250 square feet) than similar exterior panels because of the lower load levels.

Non-Load Bearing. Sometimes referred to as "bricks," glass blocks do not have the load-bearing capabilities as do other masonry products. In fact, glass block can only carry the load of its own weight. Therefore, where panels are inserted into openings, provisions must be made to support the construction above. The available structural support systems assure that the load from the surrounding wall is not transferred to the glass panel and that the possible deflection of the supporting members does not crack the panel.

At the same time, adequate provision must be made for differential movement between the glass and the surrounding wall. It is recommended that expansion joints in the surrounding wall be located at the sides and top of each glass panel. This will isolate the panel and prevent a movement crack in the wall from projecting through the glass panel.

Mortar considerations. Unlike other masonry products (i.e., brick, concrete block, etc.), glass block is non-porous and does not absorb any moisture. Because of this, the consistency of glass block mortar must be stiffer (like peanut butter) than the wetter mortar used with other masonry products. All head and bed joints must be completely filled with mortar, and all joints struck smooth to prevent penetration and migration of moisture.

All model building codes allow the use of Type "S" or "N" mortar with glass unit masonry construction. Type "S" mortar is recommended for exterior applications. Type "S" consists of 1 part Portland Cement, 1/2 part lime, and sand equal to 2 1/4 to 3 times the amount of cementitious material (cement plus lime), all measured by volume. (For exterior glass block panels, an integral type waterproofer is recommended.) No antifreeze compounds or accelerators should be used.

During final cleaning, common mortar-removing chemicals (muriatic acids of any strength) should not be used. Not that these chemicals are detrimental to glass; however, if they are strong enough to remove mortar off the faces of the block, they are also strong enough to remove the thin cement/lime film off the mortar joints, thereby exposing the sand aggregate. Rough joints such as these are highly susceptible to water intrusion.

Panel reinforcement. Horizontal joint reinforcement is important to control cracking due to expansion and contraction. This joint reinforcement should be spaced no more than 16 inches on center and extend horizontally the length of the panel. Hot-dipped, galvanized, 9-gauge steel, ladder-type reinforcement is made of two parallel wires with butt-welded cross wires at regular intervals.

Joint reinforcement should also be placed in the bed joint immediately above and below openings in the glass block panel. For curved walls, the inner wire is cut periodically so the reinforcement can be bent to the radius of the curve. The reinforcement is pressed into the partially filled mortar joint, then covered with the remaining mortar and trowelled smooth. Mortar joints should not be furrowed.

Expansion strips, made of dense fibrous glass, polyethylene, or mineral wood replace mortar at the jambs and head and at intermediate structural locations to allow for panel expansion and contraction.

Panel framing. Three methods for framing glass block panels are recommended to accommodate lateral support along the top and sides of each panel — panel anchor, channel, and chase systems. These supports are designed to resist the applied loads, or a minimum of 200 pounds per lineal foot of panel, whichever is greater.

Panel anchors: Panel anchors tie glass block panels into the surrounding frame at head and jamb locations. Anchors are used along the jambs and at the head, or they can be used in combinations with channel construction where one type of detailing is at the jambs and the other at the head. Anchors are normally placed a maximum of every 16 inches on center. This means that for an 8-inch block, panel anchors would be placed in every other course.

Channel framing: Either a metal channel or metal angles combined to form a channel can be used. The channel opening (for a nominal 4-inch-thick block) must be 4 1/4 inches to 4 1/2 inches wide by a minimum of 1 3/8 inches deep to allow for a 1-inch minimum recess of glass block into the channel and for placement of the expansion material inside the channel. It is critical that the channel opening be square, not tapered as in standard channels, so as not to pinch the edges of the glass block. The oversized opening allows the insertion of packing material and sealant between the recessed faces of the glass block and channel legs.

Chase method: A recessed chase can be inserted into concrete or masonry jambs and head, eliminating the need for anchors or metal channels. The dimensions described must be similar to those described above for metal channels.

Expansion joints. To accommodate movement of the glass, expansion joints at least 3/8-inch thick are required along the top and sides of glass block panels. These joints are filled with a resilient material such as polyethylene, which allows the panel to expand and contract. In exterior walls, joints must be well caulked to prevent water penetration.

At the bottom of the panel, a water-based asphalt emulsion is placed on the sill prior to laying the first mortar bed. This provides a slip plane for the panel and also prevents water from being drawn out of the glass block mortar by absorbent sill materials, such as concrete, brick, wood, or other porous products.

Curved walls. Curved panels require additional structural support where the curved section joins a straight section and at inflection points in multi-curved walls. One method is to connect the panel to a structural member with panel anchors. Installing a steel plate in a vertical head joint can provide a less visible support. Also, panel reinforcing should be modified to follow the contour of the curve by periodically cutting the innermost parallel wire and bending appropriately.

The inside minimum radius of a curved wall is influenced by the size of block being used. Creating a tighter curve means creating a thinner inside joint, which is not recommended, and a thicker outside joint, which may not be aesthetically pleasing.

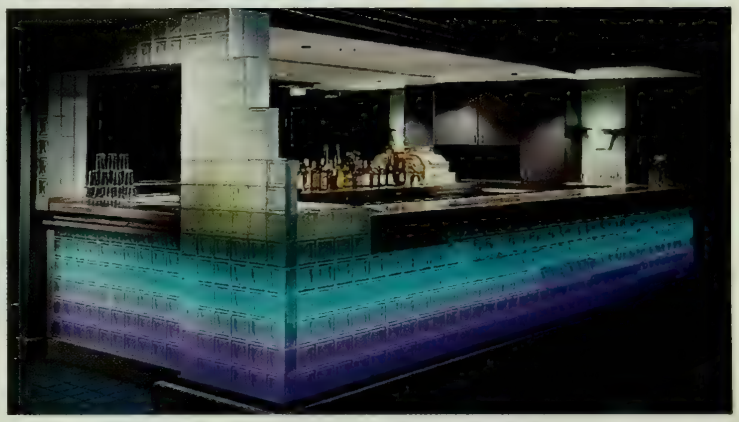
Performance

These unique properties of glass block translate into special performance characteristics regarding fire resistance; resistance to surface condensation, light, heat, thermal and shading performance; sound transmission; and earthquake resistance.

Fire-resistance. Presently, no glass block assemblies qualify as fire-rated wall assemblies. Unlike the wall assembly test that measures a material's integrity, stability and thermal transmission, the glass block window test only determines the ability of the assembly to remain structurally sound and prevent passage of smoke and other noxious fumes during the fire test. Therefore, all assemblies must meet standards set for windows (ASTM E 163) rather than walls (ASTM E 119).

All UL fire-rated glass block on the market meets a 45-minute or longer duration test. Thicker faced and solid units are available with ratings of 60 minutes and 90 minutes. Basically, the window assembly test consists of exposing a panel to a fire under controlled temperature conditions in a furnace. The panel is removed from the furnace after 45 (or 60 or 90) minutes and immediately subjected to a standard water hose steam test to determine impact and thermal shock effects. A glass block window assembly passes the hose stream test if at least 70 percent of its glass block do not develop openings through both faces of the block.





Top: *Lawrence College, Appelton, WI*
Bottom: *Scioto Downs, Columbus, OH / Architect: Kellam and Associates, Inc.*

For curved construction, 45-minute fire ratings can be obtained provided that the maximum allowable curvature does not exceed a ratio of 2:1 with respect to length of radius to length of assembly width (i.e., chord length), and only installed within masonry fire-rated walls.

Surface condensation. Resistance to surface condensation is considered impressive for hollow glass block because of the double face and partial vacuum construction of hollow glass block. In fact, standard glass blocks are considered condensation-free to minus 15 degrees Fahrenheit and thin blocks to minus 8 degrees Fahrenheit. This compares to a single-glaze flat glass, for which condensation can occur when the exterior temperature reaches 33 degrees Fahrenheit.

Light and heat transmission. While light transmission in glass block is nearly equal to that of flat glass, its thermal values are much higher.

For example, the following figures apply to light transmission:

- *Flat sheet glass — 90 percent of visible light that strikes is transmitted*
- *Solid glass block — 80 percent is transmitted*
- *Standard and thin block — 75 percent*
- *Tightly ribbed patterns — 50 percent*
- *Fibrous glass inserts and thick-faced block — 50 percent to 55 percent*

As the thickness of the glass block increases, so does heat transmission values (U values):

- *Sheet glass — U-value = 1.04*
- *Solid glass block — U-value = 0.87*
- *Thin block — U-value = 0.57*
- *Standard block — U-value = 0.51*

Thermal resistance, or R-value, is the inverse of U-value. Regarding R-value, glass block can more than double the resistance of single-glazed, 1/8-inch-thick plate glass. The solid glass block R-value is 1.15, while the 1/8-inch-thick plate glass value is 0.96. With hollow glass block and its inherent partial vacuum, a jump in R-value occurs: The R-value of thin glass block is 1.75 and the R-value of standard glass block is 1.96.

The differences between the shading coefficient of glass block and flat sheet glass is also significant. Thin glass block can reduce the shading coefficient of 1.00 for 1/8-thick flat sheet by 35 percent to 0.65 (and down to 0.45 for tightly ribbed patterns). Contributing to this, experts say, is the louvering effect of glass block's horizontal mortar joints, which helps reduce light transmission from the higher sun. The size and orientation of the block can, therefore, affect the amount of shading that occurs.

Sound transmission. Sound transmission class (STC) is a rating that provides an estimate of the sound-absorbing performance of the partition for general building design purposes. The rating is designed to correlate with subjective impressions of the sound insulation provided against the sound of speech, radio, television, music and similar sources of noise in offices and dwellings. STC value represents an average of sound transmission losses between the 125 Hz and 4,000 Hz frequencies.

The sound-reducing characteristics of glass block are most notable in the hollow block with its partial vacuum (35 STC to 40 STC). With thick-faced and solid block, the STC is 48 and 53, respectively. This compares with about 29 STC for flat sheet glass (1/8-inch thick), 45 STC for single wythe 4-inch brick wall and 50 STC for 6-inch solid c.m.u. wall system.

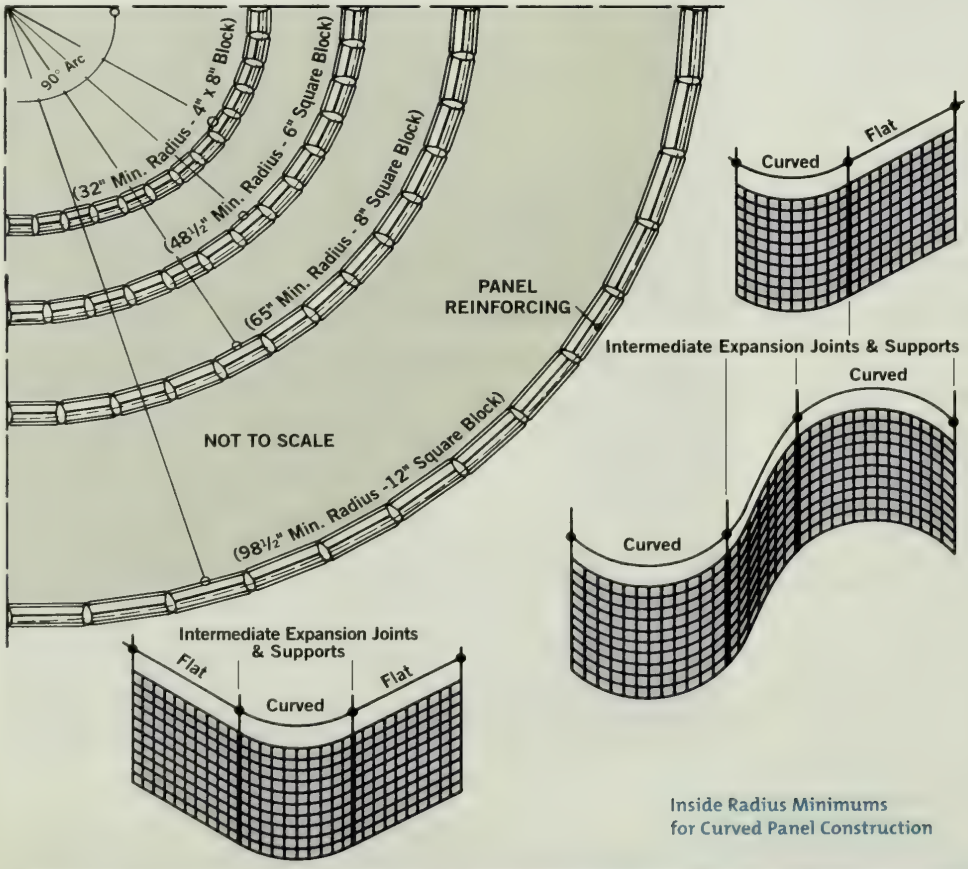
Impact resistance. Glass blocks are inherently stronger than conventional glass because of the thickness of the faces and the mortar that binds the blocks together. As a result, glass blocks are more difficult to break and, therefore, provide resistance and are a deterrent to forced entry and vandalism.

Solid 3-inch glass block units provide the greatest resistance to breakage and are ballistics-tested and qualified to UL levels 1, 2 and 6. Even greater resistance to forced entry can be achieved by using metal grid systems that accommodate the solid units.

In the case of mortared systems, single blocks can be replaced at minimal expense compared to conventional glass, which requires replacement of the full pane or panel.

Earthquake resistance. Glass block panels inherently have two attributes that make them safe in earthquakes. One is their rigidity relative to a tall building's rigidity. When used in tall buildings, the glass block panels experience earthquake motions that cycle back and forth very slowly relative to the vibrational frequency of the glass block. Thus, the glass block's ride during an earthquake is a smooth ride. The building acts like the soft shock absorbers in cars that soften passengers' ride from the irregular imperfections in the road.

The second attribute of the glass block is the rigidity of the glass block panel relative to the rigidity or short buildings or residences. The critical vibrational frequency is greater than the more severe vibrational frequency of the earthquake ground shaking. Therefore, the g-forces from the earthquake are not amplified or turned into the ground motion as other architectural items such as chandeliers or bookshelves. ■



Inside Radius Minimums for Curved Panel Construction

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at:

archrecord.construction.com/resources/conteduc/archives/0408pitt-1.asp

To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, contact Pittsburgh Corning Glass Block Technical Service at (800) 871-9918. The following quiz questions include information from this material.

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

- *Identify the structural properties of glass block when used as a building material.*
- *Understand the unique performance abilities of glass block, such as fire resistance, heat and light transmission, sound resistance, vandal resistance, and earthquake resistance.*
- *Grasp some of the economic and aesthetic implications of specifying glass block in specific building projects.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 246. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. What is the maximum square footage for an exterior wall built of standard glass block without the use of horizontal and/or vertical stiffeners or shelf angles and expansion joints?
- **a.** 4 square feet
- **b.** 12 square feet
- **c.** 144 square feet
- **d.** 350 square feet

2. Since glass block is nonporous and does not absorb any moisture, the consistency of the mortar used must be?
- **a.** Wet
- **b.** Soft (like butter)
- **c.** Stiff (like peanut butter)
- **d.** Dry

3. What should horizontal joint reinforcement do?
- **a.** Control cracking due to expansion and contraction
- **b.** Be placed no more than 16 inches on center and extend horizontally the length of the panel
- **c.** Be pressed into the partially filled mortar joint, then covered with the remaining mortar and trowelled smooth
- **d.** All of the above

4. Two of the three panel framing methods include panel anchors and channel framing. The third method is?
- **a.** The plug-in method
- **b.** The running method
- **c.** The catch method
- **d.** The chase method

5. Curved panels require additional structural support where the curved section joins a straight section and at inflection points in multi-curved walls.
- **a.** True
- **b.** False

6. All UL fire-rated glass block on the market meets a 45-minute or longer duration test meeting what standard?
- **a.** ASTM E 163
- **b.** ASTM E 119
- **c.** ASTM E 02
- **d.** ASTM E 30

7. Glass block can more than double the thermal resistance of single-glazed, 1/8-inch-thick plate glass.
- **a.** True
- **b.** False

8. Solid 3-inch glass block units that have been ballistics-tested and qualified provide what level(s) of ballistics?
- **a.** No resistance
- **b.** UL level 1
- **c.** UL levels l and 2
- **d.** UL levels 1, 2, and 6

9. To evenly light glass block with "wall washing" techniques, the light source should be placed how far in front or behind a glass block panel?
- **a.** 1 inch to 3 inches
- **b.** 6 inches to 12 inches
- **c.** 12 inches to 18 inches
- **d.** 1 foot to 2 feet

10. In commercial projects, what are the rewards of using glass block besides aesthetics?
- **a.** Reduce vandalism
- **b.** Reduce construction costs
- **c.** Reduce lighting costs
- **d.** All of the above

About Pittsburgh Corning

Pittsburgh Corning is a manufacturer of applied glass technology and systems. Located in suburban Pittsburgh, the company has been a major producer of glass block for commercial and residential use since 1937.

The glass block products are the culmination of more than 60 years of expertise and innovation in designing and manufacturing glass block. The crystal clear glass is designed to meet and exceed an extensive series of internal and industry quality control standards including ISO – 9001:2000. A wide variety of Pittsburgh Corning glass block patterns, shapes, and sizes, and the full line of proven accessories encourages the design of majestic curves and bold waves as well as elegant design touches.

For more information on glass block products, contact the Pittsburgh Corning Glass Block Resource Center at (800) 624-2120 ext. 700; or visit the website at www.pittsburghcorning.com.

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BRIEFS

A survey of light-emitting diode specifiers reports that while architects, lighting designers, and engineers say they are now more likely than before to use LEDs, bringing down costs and increasing white-light output remain concerns. The 136-page study, conducted by Zing Communications, surveyed 3,225 specifiers. For information, go to www.lightsearch.com.

Lightolier is celebrating its centennial in 2004. Originally incorporated as the New York Gas Appliance Company by Austrian immigrant Bernhard Blitzer, the manufacturer was an innovator in early fluorescent designs, flexible fixtures, and track lighting, and this year introduced its next generation of HID lighting. Consultant Dan Blitzer, great-grandson of the founder, has written a history of the company, including a time line of technical innovations. Go to www.lightolier.com.

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203 Creative Uses

204 CAD Center, Tokyo
Satoshi Ohashi; Lightdesign

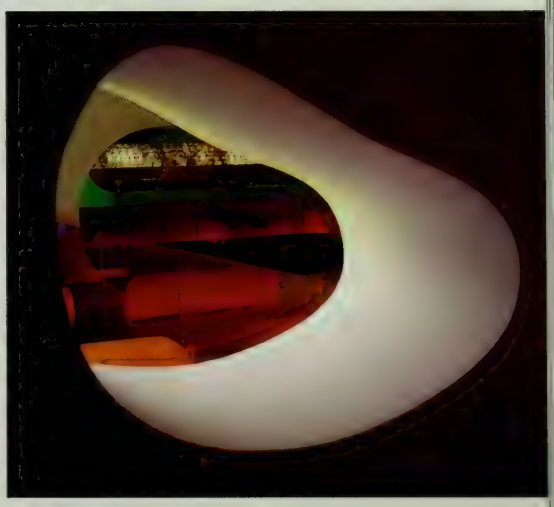
211 Discovery Communications, Silver Spring, Md.
SmithGroup

214 Powder, New York City
Focus Lighting

221 Lighting Products

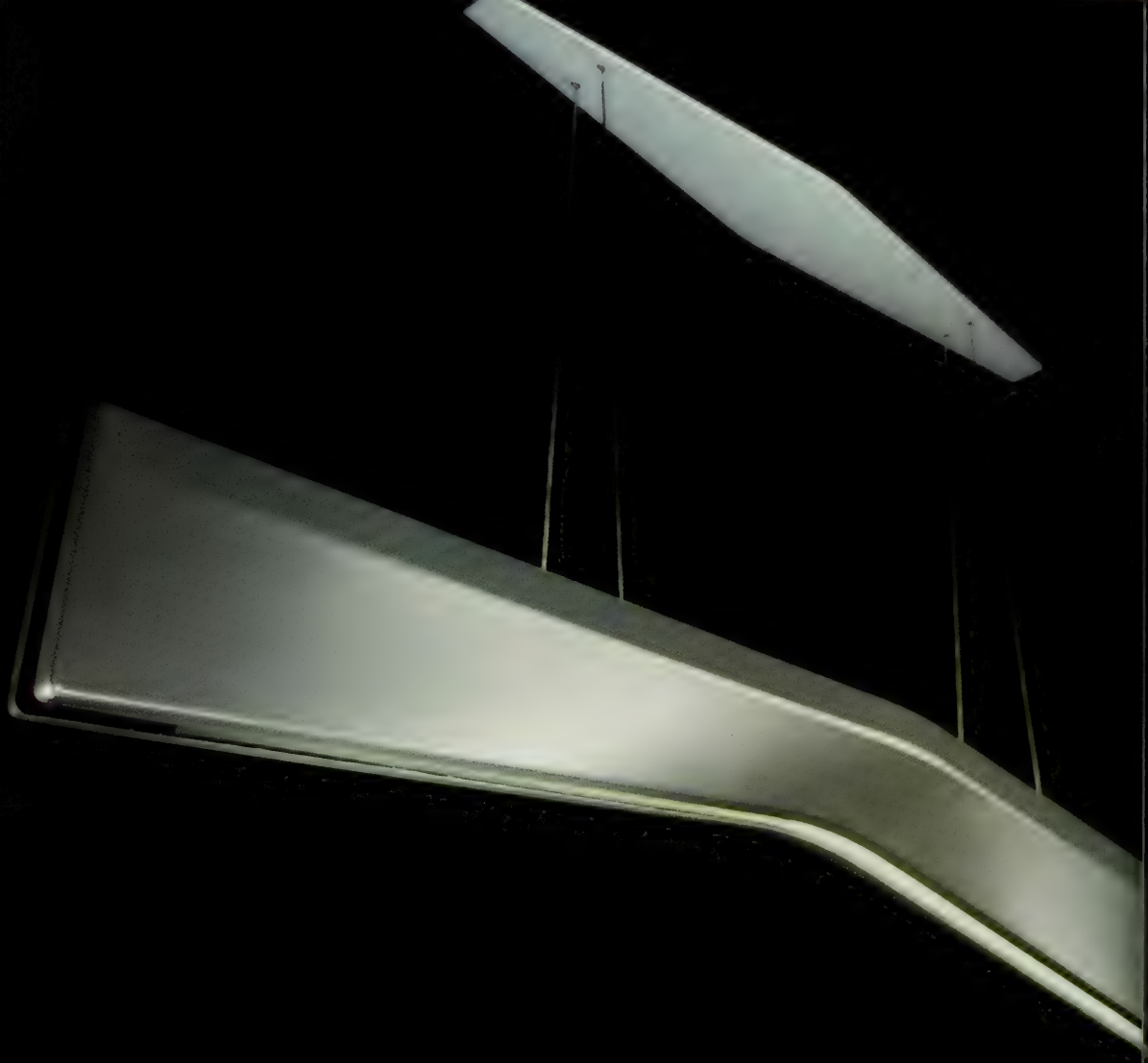
The CAD Center in Tokyo is not your average workplace. The domain of a fast-growing business that has branched out from architectural computer graphics to specialties that include virtual-reality simulation, the facility presents a brave new world filled with imaginative images and some seemingly boundless vistas. Working with consultant Hiroyasu Shoji of Lightdesign, architect Satoshi Ohashi has designed public and meeting spaces that welcome clients into an ethereal realm imbued with low-level, dramatic illumination. Guests can follow a zigzag of blue fluorescent light along its way across a ceiling, stand before a glowing blue presentation wall slashed with red lasers, or lose themselves in a virtual-reality theater whose ceiling and floor seem to merge and eliminate a horizon line—with the help of lighting and carefully positioned projection screens.

Designer Karim Rashid and consultant Paul Gregory of Focus Lighting, who previously collaborated on the Morimoto restaurant in Philadelphia [RECORD, November 2002, page 164], have teamed up again to design Powder, a New York City nightclub that weds constantly changing lighting with adventurous, amorphous forms (right). Here, too, there is a fluidity of light and space at play. An arcing perimeter wall, lit by MR16s fitted with dichroic filters, creates the illusion of a boundless sky.



Colorful illumination also distinguishes the Discovery Communications headquarters in Maryland, designed by SmithGroup. Its architectural forms are not as otherworldly as those of Powder or CAD Center, yet the complex presents a dynamic visual presence benefiting from exterior lighting by LEDs and metal halides. The fixtures enhance the lines of a tower and sweeping roof, while drawing the eye inward to interior surfaces visible through glazing. And besides its use of new lighting sources, SmithGroup is also breaking new ground regarding collaboration. Since 1997, the firm has supported an in-house lighting practice headed by Rodrigo Manriquez and Jeff Gerwing, who were both trained as architectural engineers. Frequent collaborators with SmithGroup architect colleagues, the four-person team in Detroit also consults on projects designed by outside firms. Currently working on everything from sports stadiums to museums, the studio has grown into a valued resource close at hand. *William Weathersby, Jr.*

IVALO
LIGHTING

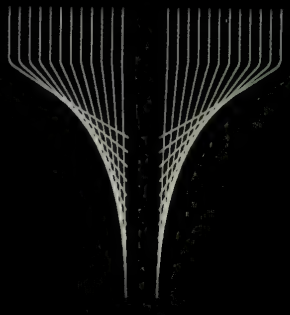


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Creative Uses



Metal halides and fluorescents are among fixtures lighting the retail area (left), reception lobby (below), and security stations (bottom).



Indirect illumination enhances an office's lobbies and retail corridor

Seeking to improve the rental-market attractiveness of a 2-million-square-foot, 1980s office complex in downtown Chicago, client Equity Office Properties commissioned IA Interior Architects to renovate the ground-floor public spaces of the complex's two adjacent buildings on Wacker Drive. More than 25,000 square feet of lobby space, connected by a retail corridor, required a face-lift. Lighting orchestrated by consultant Stefan Graf, principal designer of Illuminart, was a central element of the makeover.

A key objective of the project was to secure the renewal of a 600,000-square-foot lease for the anchor tenant, the Mercantile Exchange, during a market downturn. "The entire complex lacked a unifying identity," says principal architect Tom Powers. "We wanted to enhance the sense of arrival for guests and tenants."

Another concern, he says, was to upgrade lobby security while allowing its mechanics and operations to remain unobtrusive. Rounding out the program, existing retail tenants wanted to dress up the corridor of shops to attract more business.

Indirect lighting drives the new ambience. "The existing illumination was mostly from downlights that created pools of light and shadow," Graf says. "We used lighting to indirectly wash the vertical architectural surfaces so pedestrians can clearly identify visual cues and easily navigate through the space."

In the retail area, curved white drywall canopies lower the scale of the ceiling in front of the stores on both sides of the corridor. Light boxes that display colorful commercial images are incorporated into canted steel columns that frame each store. Two 40-watt compact fluorescent fixtures are concealed within the top of each column, casting illumination on the canopies above. Light from these fixtures is brighter than the surrounding illumination and creates a glow above the graphic images. Though some light is reflected off the ceiling, the effect is subtle, and brightness is centered along the storefronts.

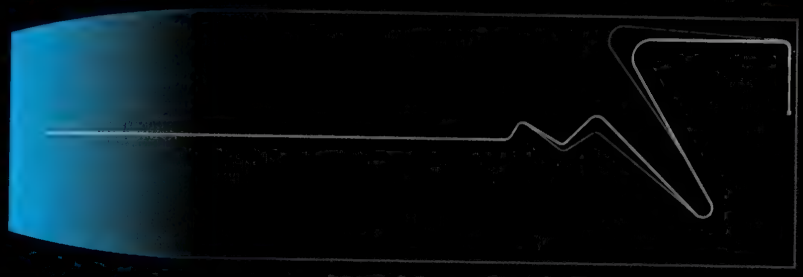
Atop each storefront, horizontal panels of translucent glass, framed by stainless steel, conceal linear fluorescents that provide additional ambient light.

Recessed downlights placed in the corridor's uppermost ceiling, which has new, reddish acoustical tile, were fitted with long-life PAR20 metal-halide lamps housed in adjustable fixtures.

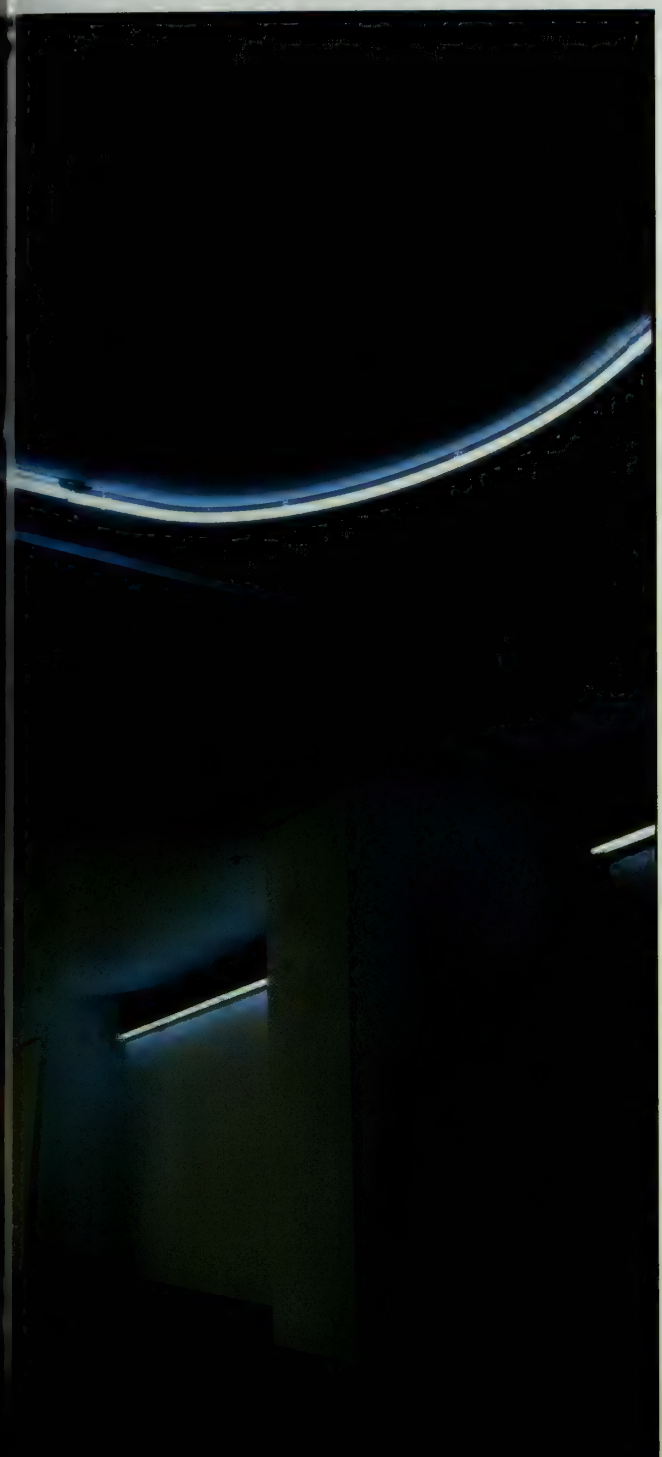
In the elevator lobbies, new acrylic numerals sit atop steel platforms to identify the complex's two addresses, 10 and 30 South Wacker Drive. Concealed fluorescent strips make them glow. Nearby, each security station is a collage of wood and translucent, backlit panels edged in steel. The units have the look of sculpture, attractively masking a sometimes laborious inspection and entry-approval process. *William Weathersby, Jr.*



A zigzagging line of fluorescents leads guests into the Media Space, creating an illusion of expansiveness within the below-grade facility (below and ceiling plan, right).



At **CAD Center,** Satoshi Ohashi and Lightdesign create new offices in Tokyo that mirror the city's kinetic energy



PHOTOGRAPHY: © TOSHIO KANEKO

By Leanne B. French

When commissioned to design a new 14,700-square-foot headquarters for CAD Center, a multimedia technology company in Tokyo, architect Satoshi Ohashi found inspiration in the kinetic, light-box energy of the surrounding streetscape. The progressive spirit and growth of the company, which has expanded its specialty from architectural computer graphics to include virtual reality, Web design, and digital visualization, reminded the architect of an urban microcosm—vibrant and in flux. Reflecting upon this metaphorical link between client culture and city, Ohashi set out to transform three floors of standard-issue office space into a self-contained, glowing metropolis.

Seeing his role akin to that of a city planner, Ohashi says he focused on "infrastructure and lines of flow" to support the company's workforce of 120 employees and to allow for inevitable changes and growth. Built in four phases, the headquarters encompasses a first floor with an entry lobby, administrative space, and a gallery to showcase the company's projects. A creative studio on the second floor houses computer graphics workstations, while a below-grade-level Media Space buzzes with high-tech presentation rooms, a motion gallery, and a virtual-reality theater.

Both cleverly practical and unexpectedly illusory, the office landscape encourages mobility and creativity. Plug-and-go workstations accommodate changing project teams, while enclosures seem fluid with sliding doors, "graffiti walls" for jotting down ideas, and wall planes curving upward to meld into ceilings. Above it all, lighting elements travel in contours that, like routes traversed on an urban superhighway, seem to direct workplace circulation.

Lighting consultant Hiroyasu Shoji of Lightdesign teamed with Ohashi on illumination that is both "welcoming and unusual," he says, not unlike CAD Center's virtual creations. At the entry, recessed blue linear fluorescents create a mysterious, intriguing ambience. Halogen spotlights in the gallery nearby draw visitors toward computer graphics projected on acrylic panels that function as multimedia canvases. A "Sky Wall" illuminated in blue, the company's signature color, sets the mood, particularly at night, when the glowing space is accented by slashes of red laser light. "The blue creates a cooler, perhaps 'digital' sense of space and depth," says Ohashi, "at times conveying the feeling of the sky within an interior environment."

On the second floor, a "cyber city" of computer workstations is connected by a continuous yellow, S-shaped border overhead that integrates power cables and equipment for lighting and sound. Here, architectural elements are mined for multiple purposes: Walls function as both partitions and surfaces for projecting digital video, overhead steel storage lockers display print graphics, and sliding acrylic panels can be flipped to become marker boards. High-color-temperature (8,000K),

Leanne B. French is a freelance writer based in New York City. She frequently writes about lighting and interiors for RECORD.



Recessed blue fluorescents with red laser accents enliven the gallery (above). High-output fluorescents illuminate a cyber city of flexible workstations (below and bottom). Clip-mounted lamps enhance task lighting.

high-output (1,000 lux) blue fluorescents and mini-halogen pinlights illuminate the general work areas. Each workstation is also lit by a clip-mounted lamp designed by Tolomeo Pinza.

A virtual landscape unfolds in the basement-level Media Space. A zigzagging brushstroke of continuous light along the ceiling leads visitors toward the virtual-reality theater, motion gallery, and presentation rooms. The meandering course of curved fluorescent tubes, complemented by walls edged with light rails, lends a sense of expansiveness to the below-grade space, which measures 24 feet wide by 92 feet long. Halogen spotlights and pinlights are on presets to create varied moods.

To support participants' virtual-reality experience within the Media Space, hardware wizardry is concealed within the infrastructure, and screens are placed precisely. A subtle, almost imperceptible downward slope in the ceiling, paired with an upward pitch of the floor in front of the virtual-reality screens, creates the illusion that the intersecting edges of the walls, ceiling, and floor disappear. Through such carefully planned architectural gestures enhanced by lighting, Ohashi and Shoji have transformed this everyday technology workplace into a dramatic, soaring, self-contained world. ■





Project: *CAD Center, Tokyo*
Lighting designer: *Lightdesign—Hiroyasu Shoji, principal lighting designer; Michiko Yokota*
Architect: *Satoshi Ohashi Architecture—Satoshi Ohashi, principal architect; Miki Agata, Hiroshi Amano, project team*

Sources
Fluorescents: *NIPPO; Mitsubishi/Osram*
Halogens: *Ushio Spax; Ardee Light*
Desk lamps: *Yamagiwa/Artemide*
Lighting controls: *Lutron*

For more information on this project, go to Projects at **www.architecturalrecord.com.**

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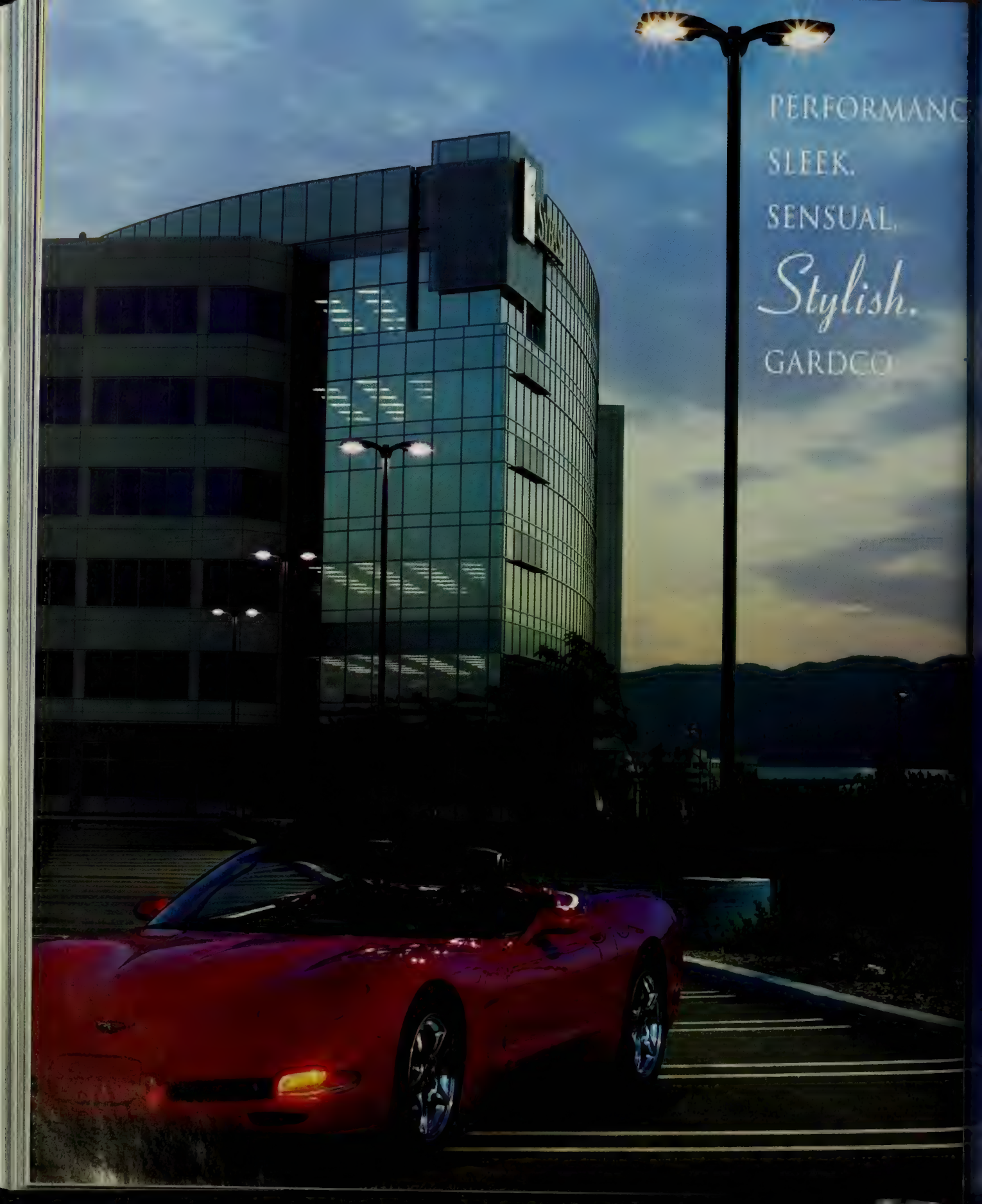
Naiad Stainless Round

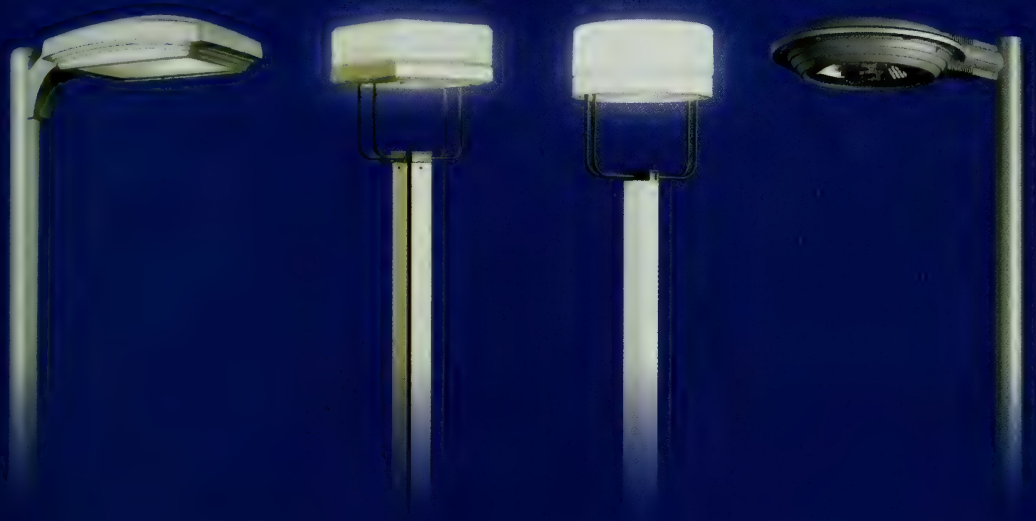
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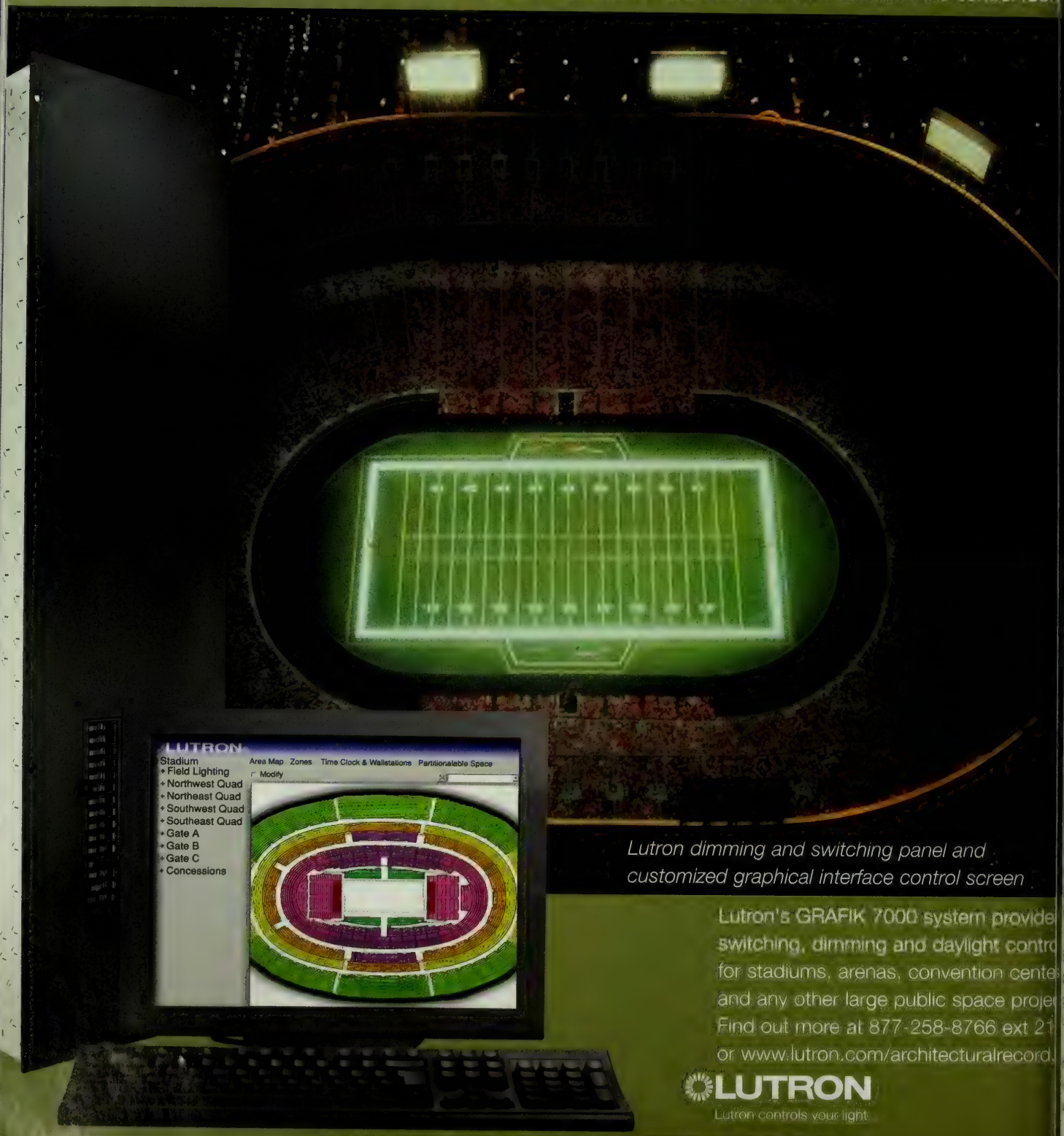
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SmithGroup bathes the **Discovery Communications** headquarters in changing color with the newest sources

By Charles Linn, FAIA

Cynthia Johnson, AIA, of SmithGroup, describes the site of the new world headquarters for Discovery Communications in Silver Spring, Maryland, as a linchpin in the revitalization of this Washington, D.C., suburb. Its corner-lot location links a busy regional transit hub with one of the town's most important zones for offices and retail, so thousands of commuters pass it every day. "We knew this building would become an icon for the community, as well as for Discovery," says Johnson, the principal in charge of the project.

The expectation that the 580,000-square-foot building would become a local landmark meant the facade would have to do more than fade to black at night to remain center stage. And more than a static display of lighting was called for by a media company whose properties include cable offerings like the Discovery and Travel Channels.

"We used light to paint a picture," explains SmithGroup's in-house lighting designer Rodrigo Manriquez. He and colleague Jeff Gerwing illuminated the curving forms along the roof line, the wall around the building's main entry facade, and an adjacent stair tower using several different lighting devices. Vertical stripes of color backlight the edges of the five-story-high window wall, which projects out from the exterior surface of the curved front-entry facade. This light is furnished by rows of recently developed high-brightness LED lamps that are sealed inside weatherproof housings. The illumination they create is concentrated by a series of linear parabolic reflectors and bounced onto the facade's reflective-metallic-finished steel panels.

Discovery's headquarters was designed by SmithGroup, whose lighting team lit the facade with LEDs.

The light that is visible inside the metal-mesh-covered stair-tower windows is produced by a row of floor-mounted LED projector fixtures located under each window, and by strips with LEDs inside mounted over them. Both the interior and exterior fixtures house red, blue, and green LEDs. Almost any color of light can be made by individually varying the intensity of any of the three LED colors. A DMX-control system slowly cycles both the interior and exterior fixtures through five different scenes, each lasting about three minutes. The front



The curved roof form is said to symbolize the gathering of information by satellite dish. Metal-halide uplights illuminate its form.



Metal-halide lamps illuminate the light tube (above two) used as a symbol of the once-common broadcast antenna. In the atrium, backlit stringers (right) make stairs appear to float. Uplights in the floor of each landing light the underside of the platform above it.

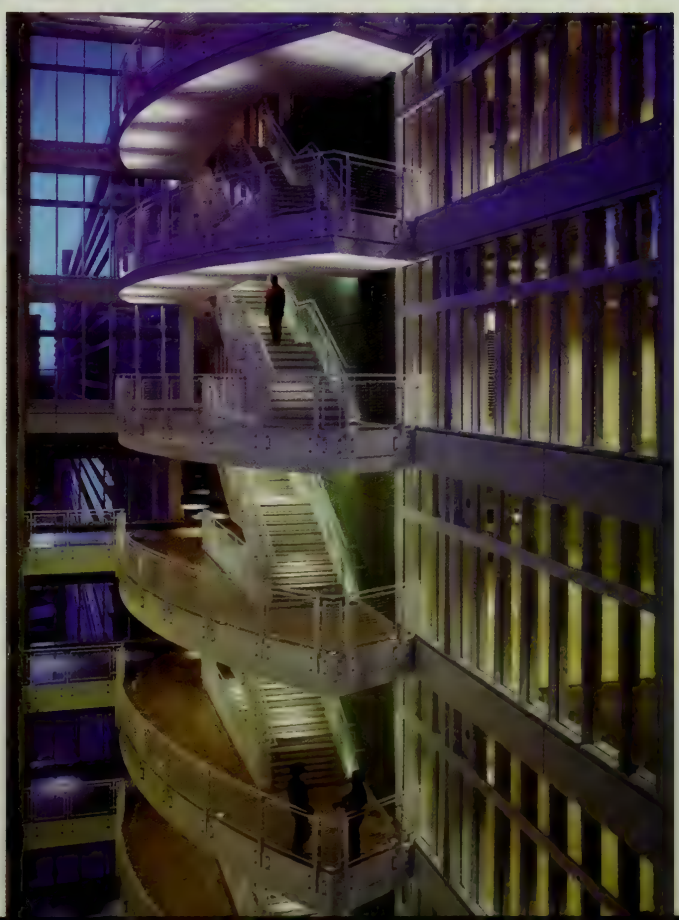
surface of the stair tower is also grazed by blue metal-halide lamps in recessed inground uplights.

The tall, antennalike bar of lighted material mounted on the building to the right of the stair-tower windows is made of four lengths of proprietary plastic and aluminum tube, placed end-to-end. A special reflective film allows light from a metal-halide lamp, which is fed from the midpoint of each piece of tubing, to be reflected evenly along its length. The long life of the metal-halide and LED sources ease maintenance concerns while providing a colorful overlay to Discovery. ■

Project: *Discovery Communications World Headquarters, Silver Spring, Maryland*
Architect, lighting designer: *SmithGroup—David R. King, FAIA, design principal; Cynthia Johnston, AIA, project manager; Jeffrey Gerwing, Rodrigo Manriquez, lighting specialists*
Interior designer: *Gensler*
Lighting programmer: *Washington Entertainment Technologies*
Electrical engineer: *Flack and Kurtz*

Sources
Light tubes: *TIR Systems*
LED cove fixtures, light panels: *Color Kinetics*
Inground uplights: *Hydrel*
Blue metal-halide lamps: *Venture*
Lighting controls: *Martin Proscenium DMX*

For more information on this project, go to Projects at **www.architecturalrecord.com**.





Focus Lighting sprinkles a little bright magic over **Powder,** a nightclub designed by Karim Rashid

By Alice Liao

According to designer Karim Rashid, dancing in the dark is a thing of the past when it comes to urban nightclubs. While dimly lit spaces and megasize dance floors were the norm in the 1980s and '90s, Powder, a New York City venue designed by Rashid for the new millennium, has free-flowing interiors and luminous walls to create an environment that celebrates going out on a more intimate scale. With atmospheric, multihued lighting that wraps a variety of seating areas for lower-key social interaction, "Powder is something of the antithesis of what nightclubs are typically about," he says.

Vibrant illumination by Focus Lighting sets the mood for Powder and amplifies its dramatic architecture. "The lighting at Powder enhances the futuristic shapes of the interior and plays a major role in activating people's imagination, making them feel that they are moving into a different world," says principal lighting designer Paul Gregory.

Situated in New York City's Meatpacking District, the 11,000-square-foot venue occupies the first floor of a 16,000-square-foot entertainment complex, which also includes a photography studio and a special events space. (The club itself has been a big draw for film and music companies renting the facility for premiere and launch parties.) Once a factory and later a garage, the raw space featured a pitched

Alice Liao is a freelance writer based in Teaneck, New Jersey. She is a regular contributor to the special lighting section of RECORD.

Project: *Powder, New York City*
Lighting designer: *Focus Lighting—Paul Gregory, principal designer; Diana Ades, project designer; Gwen Grossman, assistant designer; Terrence Connolly, project manager*
Interior designer: *Karim Rashid—Karim Rashid, principal designer*
General contractor: *Fernandez Construction*
Electrical contractor: *Mario Lozada*





Dichroic filters and MR16 fixtures add punch and drama to the lime-green VIP lounge on the mezzanine level of Powder (opposite and above). Contrasts in color and intensity define the amorphous landscape of the club (right).

MR16 monopoint fixtures, fitted with color filters and concealed in ceiling coffers, bathe guests in amber light (above). Glass pendants with halogen sources are randomly spaced to suggest stars (below).



roof and large trusses that made creating a futuristic environment a challenge, Rashid says. Further complicating the assignment was the project's tight budget. Although average building costs of a typical New York nightclub range from $200 to $250 per square foot, Powder was completed for a mere $80 per square foot. "I almost thought it impossible," Rashid says.

The transformation from industrial site to hip nightspot was achieved with an architectural envelope that eschews sharp lines and corners for an overall amorphous feeling. While the layout of the club—bars

WITH MELDING, COLORED PLANES, "I WANTED TO DEVELOP A SPACE THAT FELT LIKE INFINITY," SAYS KARIM RASHID.

and lounges grouped around a central dance floor—may be familiar, the entire space is contained by an arcing perimeter wall that fuses seamlessly with the ceiling, giving the appearance of a boundless sky. Portals and whimsically shaped cutouts promote a spatial fluidity while contributing to Powder's ethereal ambience. "I wanted to develop a space that felt like infinity," Rashid notes.

Although an early schematic concept suggested illuminating the interiors with white or a faintly tinted light, in the end the design team opted for a dynamic scheme of saturated hues and shifting contrasts to alter the perception of the interiors. According to Gregory, immersing the

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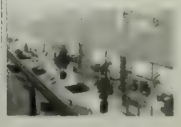
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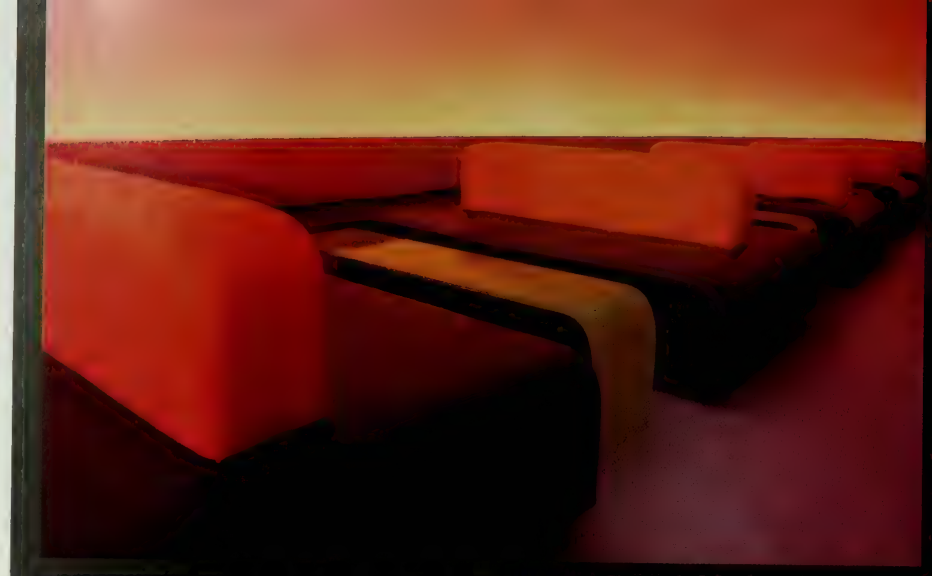


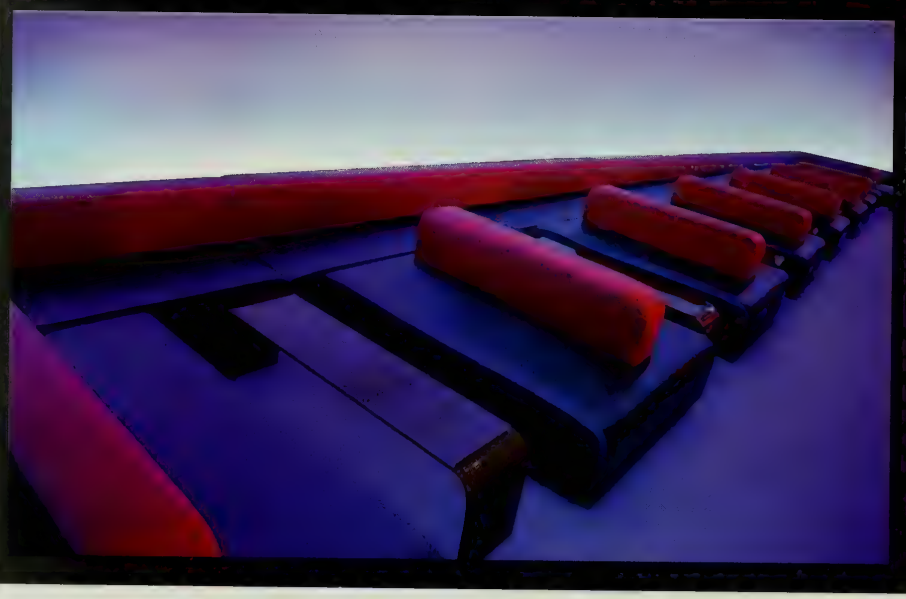
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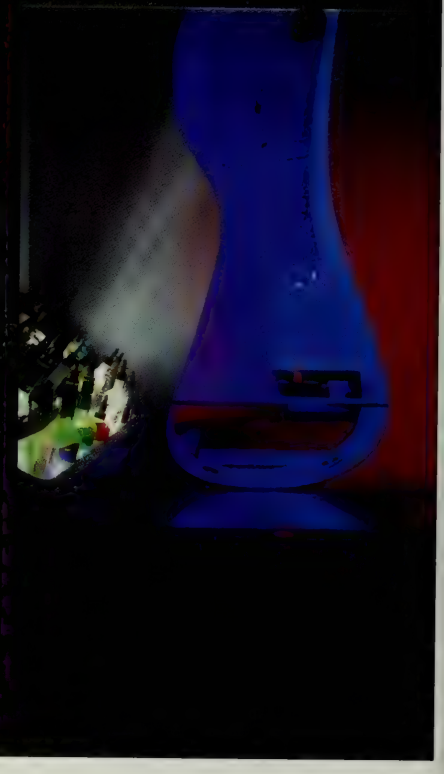


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Lighting the back wall, striplights behind the banquettes produce an even wash of light from floor to ceiling (left and below left). Colors shift in gradual fades. Mounted below risers, T8 fluorescents with color sleeves add sparkle to the bar (below right).

club in color "helps inspire clubgoers to feel a connection with the space."

In the entry stairway, guests are welcomed into a corridor whose walls have been painted pink and then accented from above with track-mounted MR16 fixtures. Tucked in a pocket at the rear of each stair tread, single-lamp T8 fluorescent strips with pink filters guide guests up the stairs while intensifying the mood.

Farther inside the club, vertical surfaces and the curved perimeter walls are bathed in smooth washes of colored light, reinforcing the illusion of boundlessness. Because the design concept required the back wall to be illuminated with fixtures concealed within the 10-inch-wide trough behind banquette seating, mock-ups were conducted with a 10-foot-tall foam core model and plaster to determine the arc and finish of the wall and to find a lamp whose beam performance and reflector would ensure uniformity from floor to ceiling.

As a result, MR16 striplights equipped with red, green, and blue dichroic filters are integrated into the architecture to light the back wall, arches, and other vertical surfaces. The fixtures cycle slowly through a spectrum of colors, ranging from rich ambers and reds to lavender and turquoise. For the larger portal openings surrounding the dance area, color-changing wall washers lamped with metal-halide sources are recessed in the floor.

MR16s also add visual interest to the dance floor, where they are recessed in steps and along the edge of the floor. In a bar area, the fixtures suffuse a series of ceiling coffers with a golden glow. All MR16 lamps were specified with screw bases to facilitate maintenance.

"It's really the beauty of a sunset versus a starry night," says Gregory, comparing Powder to other clubs. "And you know how beautiful people's faces look in the pink and amber light of a sunset." ■

Sources

Custom MR16 socket strips: *Litelab*
Recessed MR16 fixtures: *Halo*
Framing projectors: *Theatrical Square Lighting*
Low-voltage linear lighting: *Lucifer Lighting*
Dichroic glass: *F.J. Gray & Co. Glass; High End Systems*
Fluorescents: *Lamar Lighting; Mercury Lighting*
Lamps: *Osram Sylvania; GE; Ushio*
Dimming controls: *ETC Lighting Controls*

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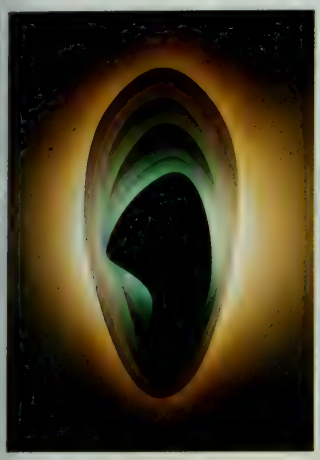
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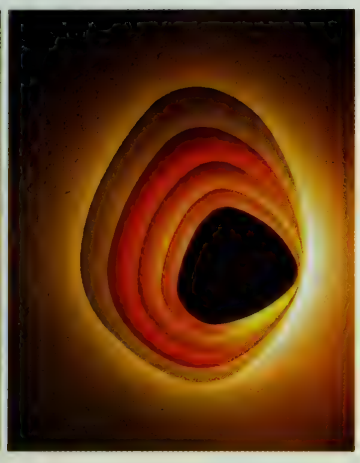
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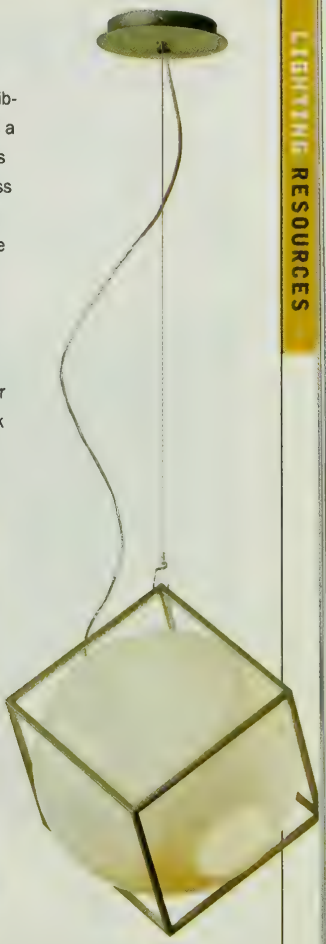


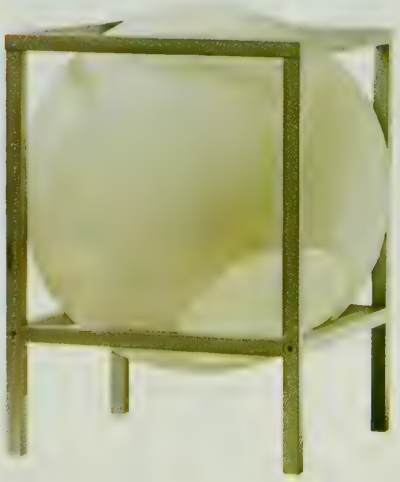
▲ Glowing landscapes

At this year's ICFF, blankblank launched the heliocentric lighting series, an extension of designer Rob Zinn's artwork based on a patented theory of reflective light. Zinn, who studied and taught at New York's Pratt Institute, has created surreal fixtures featuring layers of plastic and acrylic in elliptical shapes lit by 20-to-35-watt halogen lamps. All socket systems are UL-listed; the wall-sconce fixtures are planned to be listed as well. Custom colorways and sizes will be available for larger commercial orders. The company is currently developing a cylindrical floor and table light that will be available in modular sections. blankblank, Sacramento, Calif. www.blankblank.net **CIRCLE 200**

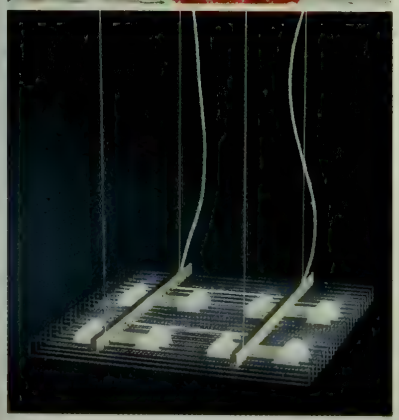
▼► La bella luna

Oxygen Lighting's Lunetta family, produced in Spain, features a luminous frosted-glass sphere, a playful tribute to the moon. The pendant version (right) includes a thin, square, bent-steel-tube frame that looks as if it's floating in space on an angle, enclosing the 13½" glass orb. A thin aircraft cable runs down the center of the pendant from the canopy and holds the square frame with a satin nickel hook, while the pendant's cord is made to appear free-form. The Lunetta table lamp (below) is designed to be used as a small accessory item or luminous sculpture that can be placed on a shelf, desk, or table. The 6"-wide sphere sits off-center in a square metal cage on four legs. Oxygen, New York City. www.oxygenlighting.com **CIRCLE 201**









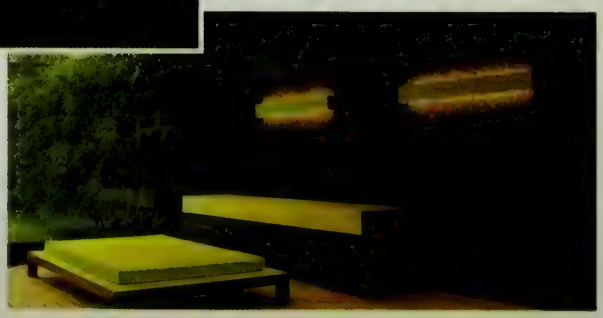
◄ Modern Murano glass fixtures

Alt Lucialternative, founded in 1963 as an art glassworks, currently produces hand-blown-glass light fixtures that blend traditional and experimental techniques. The Moody S pendant (top), designed by Manuel Giuliano, features chrome-plated metal and a blown crystal diffuser, partly glazed in two different sizes. Alt Lucialternative's sister company, Muranodue, is also linked to Murano's ancient glassmaking tradition. Muranodue's Blade fixture (bottom) is available in two hanging-lamp versions and a wall version. Designed by Paolo De Lucchi and Giorgia Paganini, Blade features an aluminum frame and glass-plate diffusers. Eurofase, Toronto. www.eurofase.com **CIRCLE 202**



◄ Improving foreign relations

The LC-Euro Collection by Litecontrol features 16 products from four new European partners: Fagerhult of Sweden; Hacel of England; and Waco and Dark of Belgium. Made in the production facilities of the European companies, the lights are then shipped unassembled to the U.S., where Litecontrol reengineers and assembles every product to meet American standards. The Butt fixture from Waco (left) and the Juice light from Dark (below) are two examples of indirect/direct ADA-compliant wall fixtures available from the collection. Litecontrol, Hanson, Mass. www.litecontrol.com **CIRCLE 203**



Lighting Products

► The first member of the family



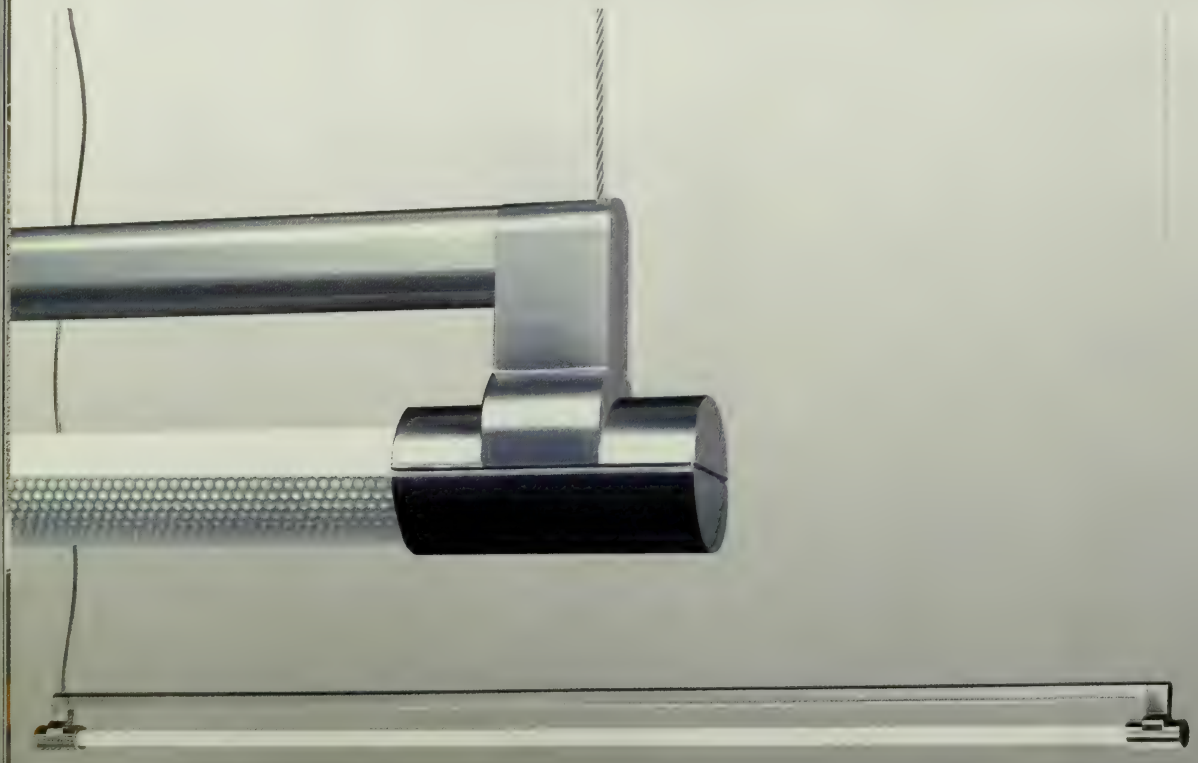
Rotare is the first in a series of five new families from Ivalo Lighting that will be introduced in the next 16 months. Designed by the New York City–based architectural firm Lewis.Tsurumaki.Lewis, the direct/indirect pendant required a CATIA finite element analysis to successfully realize the demanding form. Rotare features a lustrous automotive paint surface and curves from a vertical at the ends to a horizontal in the center, following the sweeping rotation of a ruled surface. Rotare was designed with two T5HO lamps and a frosted lens that diffuses the downward component of the light. Ivalo Lighting, Willow Grove, Pa. www.ivalolighting.com **CIRCLE 204**

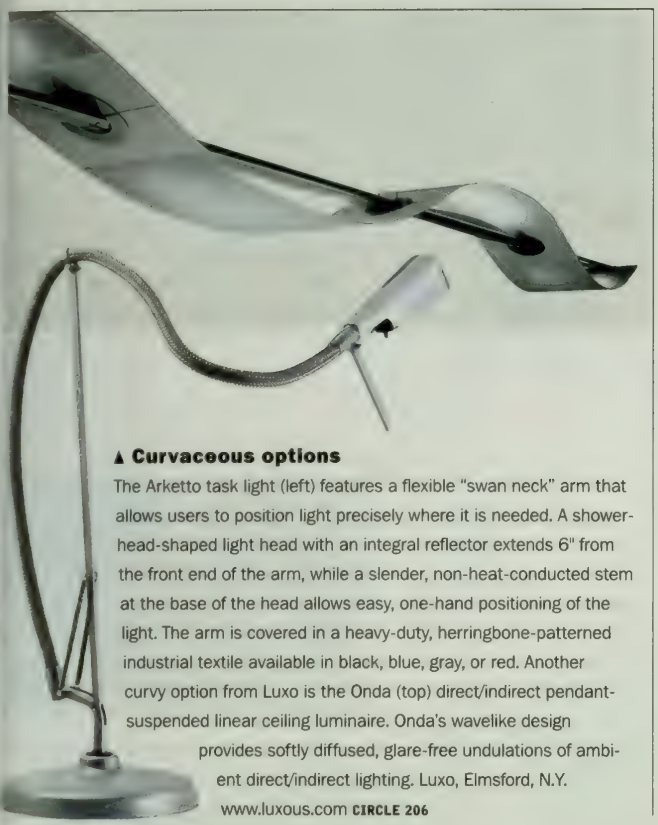


▲ Color-changing wall

Lumid partnered with the Friedmutter Group of Las Vegas and Kaplan Partners Architectural Lighting of Los Angeles on this cone-shaped, custom-made wall for the Sushi+Sake Restaurant at the Green Valley Ranch Casino in Henderson, Nevada. The luminous wall is composed of sections of translucent polymer, connected by joints of MDF and a steel structure and railing. Attached to the interior polymer surface is an optical film that picks up light from two illumination centers controlled through Lumid's internal DMX computer control system and Lightingtools LED technology. The wall measures 24" long x 4½" high x 36" wide and displays a spectrum of colors that change almost imperceptibly. Lumid, Montreal. www.lumid.com **CIRCLE 205**

For more information, circle item numbers on Reader Service Card or go to www.archrecord.com, under Resources, then Reader Service.



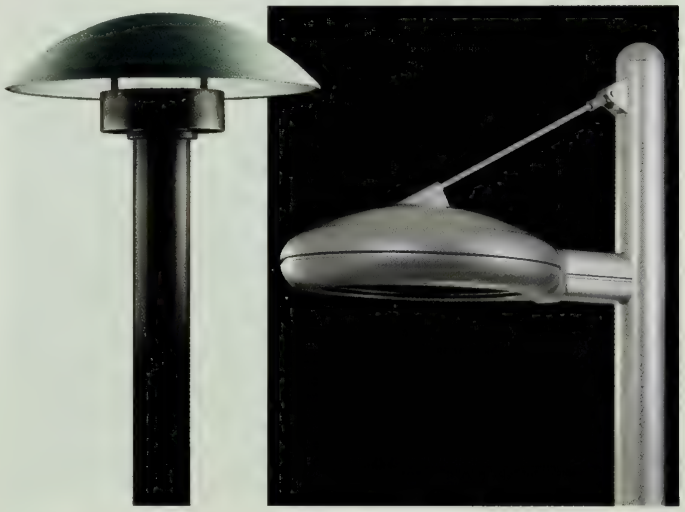


▲ Curvaceous options

The Arketto task light (left) features a flexible "swan neck" arm that allows users to position light precisely where it is needed. A showerhead-shaped light head with an integral reflector extends 6" from the front end of the arm, while a slender, non-heat-conducted stem at the base of the head allows easy, one-hand positioning of the light. The arm is covered in a heavy-duty, herringbone-patterned industrial textile available in black, blue, gray, or red. Another curvy option from Luxo is the Onda (top) direct/indirect pendant-suspended linear ceiling luminaire. Onda's wavelike design provides softly diffused, glare-free undulations of ambient direct/indirect lighting. Luxo, Elmsford, N.Y. www.luxous.com **CIRCLE 206**

▼ Lighting the great outdoors

Shaper, a division of Cooper Lighting, offers a new Architectural Outdoor series consisting of post-top luminaires, bollards, and companion wall luminaires. The Post Top series' shade options (left) range from traditional curved and truncated styles to architectural domes and double-wedge configurations. Invue Lighting Systems, also a division of Cooper, introduces the Icon architectural area luminaire (right). Icon offers solutions for full cutoff compliance, spill light control, and path of egress illumination, and is offered in two arm choices combined with multiple housing sizes and lamp options, and precision-built segmented optical systems. Cooper Lighting, Peachtree City, Ga. www.cooperlighting.com **CIRCLE 207**



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Lighting Products

▼ Light of the year

Awarded Best New Product of the Year at this year's Lightfair, io's Line (below) is a low-voltage linear accent luminaire that utilizes 1-watt, high-brightness LEDs. Available in 10-, 30-, and 60-degree, as well as asymmetric, beam distributions and lengths up to 108", Line is ideal for interior and exterior building-grazing or wall-washing effects and may be surface- or wall-mounted. Stick is io's solution for accent lighting from within tight architectural details. Ideal for niche, cove, handrail, and casework lighting, it may be ordered in incremental lengths from 6" to 96". io Lighting, Melrose Park, Ill. www.iolighting.com **CIRCLE 208**





◄ Pick the better switch

Aspire is a contemporary-styled line of electrical devices from Cooper Wiring Devices. With a signature curve motif and contrasting matte and low-gloss finish, the Aspire series comes in three distinctive, two-tone neutral color combinations: White Satin, Desert Sand, and Silver Granite. The concave shape of the switch guides the finger along the surface. Cooper Wiring Devices, Long Island City. N.Y. marketing.cooperwiringdevices.com/aspire **CIRCLE 209**

► Smarter skylight



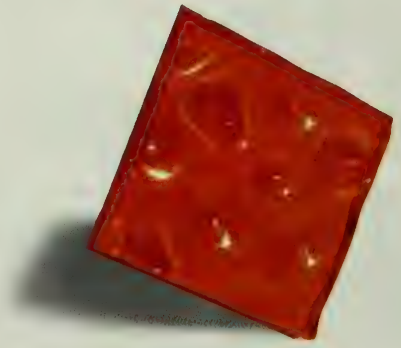
Unlike passive skylights, the ADS-600 active daylighting system employs a mirror array that tracks the sun precisely throughout the year, directing light from the brightest part of the sky down and into interior spaces. The mirrors conduct low-angle sunlight efficiently, and also shade the intense light sometimes found at high sun angles. The system runs on energy generated by a single photovoltaic cell. So-Luminaire, Carlsbad, Calif. www.soluminaire.com **CIRCLE 210**

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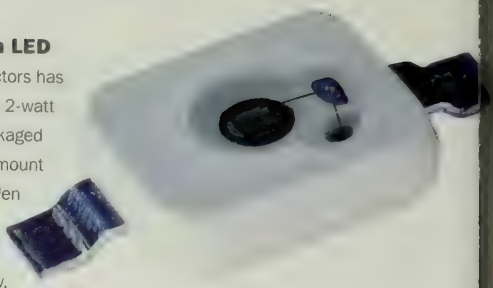
Lighting Products

► Energy-efficient retail lighting solutions

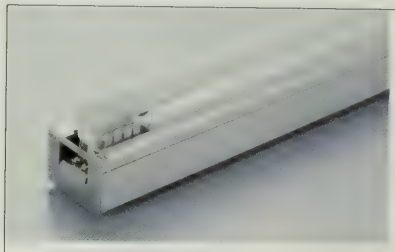


Along with Advance Transformer, Philips has introduced the smallest ceramic-metal-halide system in retail lighting. The new 20-watt Mini MasterColor (top) is 50 percent smaller than competitive products, offering retailers more design freedom and lower operating costs. The long life of the bulb (9,000 hours) means fewer lamps need to be changed, and the smaller size means it requires less packing, materials, mercury, and energy to make. Another new product for the retail market is the MasterColor CDM-R 111 (bottom), which brightly highlights retailer's product and window displays without glare while saving them money on energy and maintenance. Philips Lighting, Somerset, N.J. www.lighting.philips.com **CIRCLE 211**

► Next generation LED



Osram Opto Semiconductors has introduced its "lead-free" 2-watt Golden Dragon LED. Packaged in a proprietary surface-mount technology LED, the Golden Dragon LED is now available in a full spectrum of colors: red, yellow, green, blue, and standard white. The LED has an extremely low thermal resistance and a product life of more than 50,000 hours. Osram Opto Semiconductors, San Jose, Calif. www.osram-os.com **CIRCLE 212**



▲ Seamless lighting fixture

The Seamlessline T6 fluorescent integral lighting fixture offers "seamless" direct and indirect lighting. The fixtures can be installed in a line to create uniform brightness and eliminate dark zones. The UL-listed fixture offers an average lamp life of 20,000 hours, nine lamp colors, four ways of connecting, and line-voltage options of 120 or 277 volts. Featured in high-profile projects including the Roppongi Hills Mori Tower and the Grand Hyatt in Tokyo, Seamlessline won a Best of Category Award at this year's Lightfair. Nippo Electric, New York City. www.nippo-web.com/us **CIRCLE 213**

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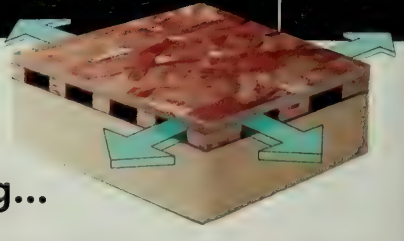
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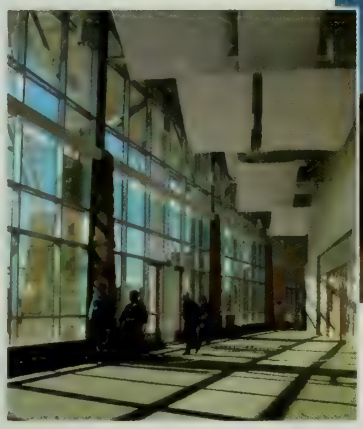
Products

Glass & Glazing

The **glass and glazing** options featured this month have a variety of attributes to help architects achieve the aesthetic or technical goals of projects ranging from medical centers to train stations. Energy-efficiency, privacy, and **products that maximize views and daylight** are common issues. *Rita F. Catinella*

Solar-control glass helps maximize the view of a riverside convention center





The Grand River Center is an 86,000-square-foot meeting and convention center located on the Mississippi River in Dubuque, Iowa. The building is a signature element in the city's larger America's River development, which also includes The National Mississippi River Museum and Aquarium, the Mississippi Riverwalk, and the Grand Harbor Resort and Waterpark. Designed by David Greusel of HOK Venue, Kansas City, Missouri, Grand River Center is designed to take advantage of its exceptional river views.

The center includes a 2,200-square-foot, special-purpose reception and meeting space that cantilevers dramatically over the river levee; a 30,000-square-foot, multipurpose ballroom; and 12,000 square feet of divisible meeting-room space on two levels.

Dramatic glass walls, crafted from alternative bands of Solarban 60 and Solarban 80 Solar Control Low-E Glass from PPG, stretch from floor to ceiling. The two types of glass were selected for their solar control characteristics, which dramatically reduce heating and cooling costs while allowing for the transparency demanded by the building's riverside setting. PPG Industries, Pittsburgh. www.ppg.com

CIRCLE 214

Blue glass waterfalls bring both light and serenity into a Brooklyn mausoleum

Artwork in Architectural Glass (AAG) supplied 32 Wide Spartina texture cast-glass panels, measuring 106" x 47" each, for two waterfalls in a mausoleum at the Green-Wood Cemetery in Brooklyn, New York.



The glass texture prevents splashing.

The texture of AAG's ⅜"-thick Wide Spartina panels was developed specifically for waterfall applications—the water runs smoothly from one deep-blue, ribbed-glass panel to the next, eliminating any splashing or spitting issues. The project was completed last March by architect David Grider of Platt Byard Dovell White in New York City in collaboration with Lynbrook Glass & Architectural Metals, of Hauppauge, New York.

According to Grider, the waterfall not only relates directly to the shingled-glass treatment of the facade, but "acts like a prism to capture and reflect both sunlight from above and incandescent light from below," diminishing the sense that the visitor is several floors below grade. AAG, Good Hope, Ga. www.artworkinglass.com **CIRCLE 215**



The Hillman Center's atrium.

Glass block links five-story medical center

The Hillman Cancer Center is the University of Pittsburgh Medical Center's flagship cancer treatment and research facility. The designers of the 350,000-square-foot facility, IKM Incorporated, were faced with the challenge of creating a space that would be warm and comforting enough for patient care while remaining a highly functional research facility. To accomplish this goal, IKM linked the patient care pavilion with the research pavilion via an atrium spanning five stories. The atrium uses Pittsburgh Corning glass block to create a separation between the research and clinical wings, allow natural light to penetrate all the floors and both pavilions, and create appropriate levels of transparency and privacy for the treatment, laboratory, and office areas. Pittsburgh Corning Glass Block, Pittsburgh. www.pittsburghcorning.com

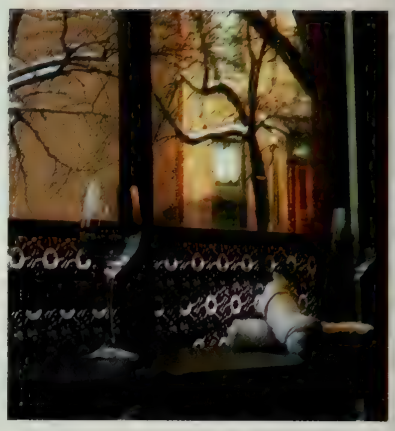
CIRCLE 216

► Fire-rated door-glass option



Marshfield DoorSystems now provides PyroEdge-20 fire-rated clear glass as part of its Expressions del Sol factory-installed glazing collection. Tested and rated to meet or exceed all local, regional, state, and federal code requirements, PyroEdge-20 fire-rated glass offers a clear ¼" tempered glazing, rated for 20-minute positive and neutral pressure applications without hose stream testing. The glass is distortion-free and up to 10 times stronger than wired glass. Like other Expressions del Sol glazing options, it can be etched to feature custom artwork or logos. Marshfield DoorSystems, Marshfield, Wis. www.marshfielddoors.com **CIRCLE 217**

► Custom window film



GlassFilm Enterprises offers a custom-designed window film that enables graphic and photographic images to be converted into a decorative film for interior or exterior glass. The material is created using a proprietary ink-to-film process, which allows for color, black, or white images. Film resembling intricate ironwork was used as a privacy screen and window decoration for The Butcher Shop wine bar in Boston (right). Also available from GlassFilm is Lumisty, a film that morphs from transparent to translucent as the angle of view changes. GlassFilm Enterprises, Boston. www.glassfilmenterprises.com **CIRCLE 218**

▼ Pushing the cast-glass envelope

A cast-glass sculptural wall for the American College Testing headquarters in Iowa City, Iowa, designed by Flad & Associates of Madison, Wisconsin, was an ambitious project for Meltdown Glass. The 22 panels of ½" tempered glass, which weigh 300 pounds each, were cast to form a single flowing composition with fused dichroic glass. Several of the panels are movable and recess into the wall to allow access from a conference area to an eatery for employees. Meltdown Glass Art & Design, Chandler, Ariz. www.meltdownglass.com **CIRCLE 219**

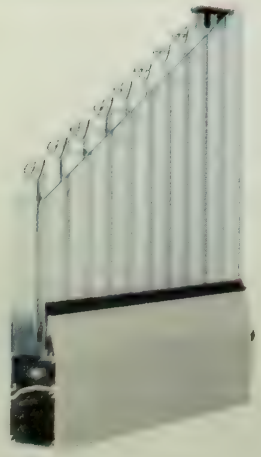




◄ Canadian crafted curtain wall



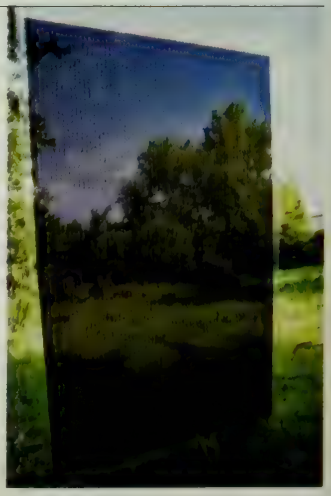
Mon-X is a Canadian company that provides a range of products, including entrances, sconces, railings, and columns, in materials such as custom glass, stainless steel, bronze, and aluminum. Shown here is a glass wall for the Dongbu Kangnan building in Seoul, designed by Kohn Pedersen Fox Associates of New York City. The wall covers an area of approximately 3,445 square feet and is composed of ½"-thick thermofused glass set in a stainless-steel curtain wall. Mon-X, Montreal. www.monx-international.com **CIRCLE 220**



◄ Adjustable glazing system

Controlite panels consist of proprietary translucent half-cylinder Rota-blades built into translucent, light-transmitting polycarbonate panels. When fully open, they allow for a maximum of 60 percent light transmission; when closed, they allow a minimum of 6 percent. The angle of the Rota-blades is completely adjustable through a manual, motorized, or a fully automated system that works automatically to maintain the desired light level throughout the day. CPI, Lake Forest, Ill. www.cpidaylighting.com **CIRCLE 221**

► Powerful photovoltaics



RWE Schott Solar's semitransparent building-integrated photovoltaic panels for windows, facades, and skylights lower energy costs, provide glare protection, supply heat insulation, and reduce greenhouse gases. Independent studies show that the thin-film panels provide 20 percent more energy per rated wattpeak unit than other solar-cell technologies. The frameless panels have been integrated into the New York City's Stillwell Train Station canopy—the largest thin-film solar project realized in North America. Schott N.A., Elmsford, N.Y. www.us.schott.com **CIRCLE 222**

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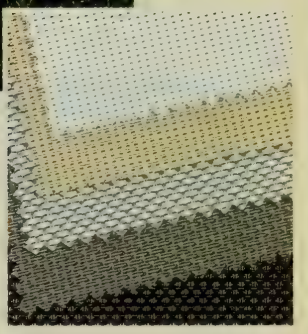
Product Briefs

► Carpet couture

During the Milan Furniture Fair, Post Design launched Life's Commodities 2.004, a new collection of carpets handmade in wool by Nepalese craftsmen and featuring the visions of designers such as Massimo Iosa Ghini (right), Alessandro Mendini, and Karim Rashid. Each carpet is produced in a limited edition of 36. Upon request, carpets may be manufactured in a different size proportional to the standard size. Post Design, Milan. www.memphis-milano.com **CIRCLE 223**







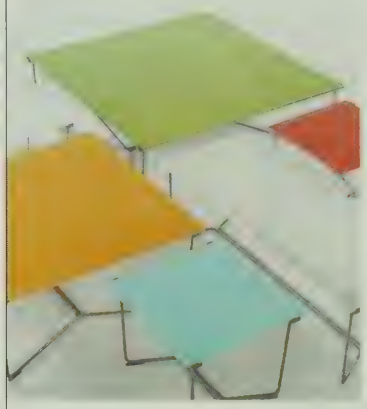
Product of the Month
Ecoveil Solar Shade Cloth ,

After six years in development, MechoShade Systems has launched the EcoVeil solar shade cloth, created with assistance from the sustainable-product development firm MBDC. Incorporating a new material constructed with a thermoplastic olefin-based yarn called EarthTex, EcoVeil can be recycled into new shade cloth as well as other EarthTex-based products, a process made easier once MechoShade implements a planned "take back" program for the shades. EcoVeil's coating, or "jacket," is essentially the same polymer as the core yarn, which allows it to be melted down, reprocessed, and made into new product. Traditionally, solar shade cloths are hybrids of a PVC jacket and fiberglass or polyester core yarns, which are combined into an unusable "muddy hybrid" that cannot be separated for reuse. MechoShade Systems, New York City. www.mechoshade.com CIRCLE 224



▲ Security at the touch of a finger

Glide's clever range of products includes a solid teak cutting board that incorporates a digital scale inset into its flip side. The company's Mod Filing Cabinets (above) use a fingerprint sensor to control access to locked drawers. Each is individually controlled so users can be granted access to a single drawer, several drawers, or entire cabinets. Multiple cabinets can be controlled wirelessly by a single fingerprint sensor to create a complete and secure office system. Glide, New York City. www.glide-inc.com **CIRCLE 225**



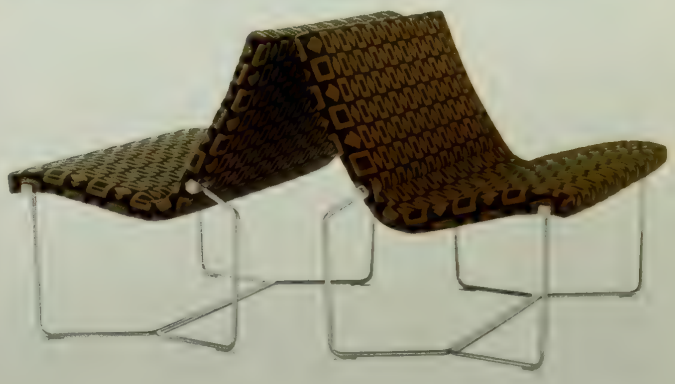
◄▼ Mining their assets

Harter has a new image—and a new collection of products to go with it—that reflects the clean-lined, functional furniture offered by the company in the 1950s through '70s. Harter has invited several designers to update the best of their past designs—including the multipurpose tables and lounge chairs shown here—using new technology and materials adapted to today's multifunctional workplaces and lifestyles. Harter, Middlebury, Ind. ww.harter.com **CIRCLE 226**



▲ Chicago-style carpet

Introduced in its namesake city during Neocon, Masland Contract's Chicago Collection of commercial carpet is inspired by the rich urban landscape of Chicago. Designed by Eva Maddox and Eileen Jones of Perkins & Will, the seven styles of the collection interpret the city's defining elements, from Chicago-style windows to its park systems and bridges. It is available in 10 colorways for corporate environments. Masland Contract, Mobile, Ala. www.maslandcontract.com **CIRCLE 227**



Product Briefs

▼ Outdoor furniture that's environmentally conscientious

All of the pieces in Modern Outdoor's furniture line are made from electropolished stainless steel; natural-composite-resin-infused paper surfaces; and Forest Stewardship Council–certified Ipe, a Brazilian hardwood that is three times as hard as teak. Three distinct lines comprise the collection, and each is suited for residential, hospitality, or public spaces. The Etra line, with its larger plank style, includes a table, bench, chaise longue, trolley cart, and four chairs; Kenjii, which features smooth slatelike black tops, includes a table, bench, and planter; and Talt (left), with its low-back aesthetic, includes tables, benches, a chair, side table, chaise longue, and trolley cart. Modern Outdoor, Lake View Terrace, Calif. www.modernoutdoor.com **CIRCLE 228**





◄ Reformulated silicone paint

Ultimate is a new line of premium exterior paints that use an advanced silicone paint technology new to the U.S. market. Reformulated for U.S. weather and exterior siding conditions, Ultimate allows moisture from behind to pass through the paint layer, virtually eliminating blisters or bubbles when applied properly. The paint uses ceramic pigmentation that resists UV degradation, which can lead to fading. Rodda Paint, Portland, Ore. www.roddapaint.com **CIRCLE 229**

► Neat little package



Based on a post-and-beam concept, Interval is a freestanding architectural structure that integrates full-height walls, ceiling systems, utilities, and furniture components into a single, modular package. Interval's construction features a flexible grid of beams, open on the upper side, to provide a route for cables and wiring. Where a ceiling is required, for acoustic or aesthetic purposes, monolithic ceiling panels are used to enclose the space. Inscape, Ontario. www.inscapesolutions.com **CIRCLE 230**

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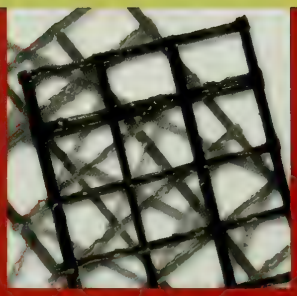
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Product Briefs



► An update for a classic chair

The prototype for Nienkämper's HAB chair, designed by Toronto-based architects Brigitte Shim and Howard Sutcliffe, was a custom commission for a narrow boathouse residence that required the traditional Adirondack chair translated into a modern furnishing. An angular steel base supports a veneered, molded-maple-plywood version for indoor use or a folded aluminum version for outdoor use. The collection also includes a range of veneered maple-plywood-topped tables. Nienkämper, Toronto. www.nienkamper.com **CIRCLE 231**





◄► Concrete home sweet home

Everlast Concrete used more than 6,000 square feet of Bomanite architectural concrete product for this award-winning residence. Bomanite Thin-Set, a polymer topping normally installed at a thickness of ⅜", was troweled on walls, fashioned into railing, layered to create a fireplace surround, and hand-sculpted to produce a wall that doubles as Modern art. Bomanite Micro-Top, a paper-thin cementitious material, was used to express the homeowner's vision for the foyer floor, while Patène Artectura stains were applied on nearly every surface of the home. Bomanite, Madera, Calif. www.bomanite.com **CIRCLE 232**



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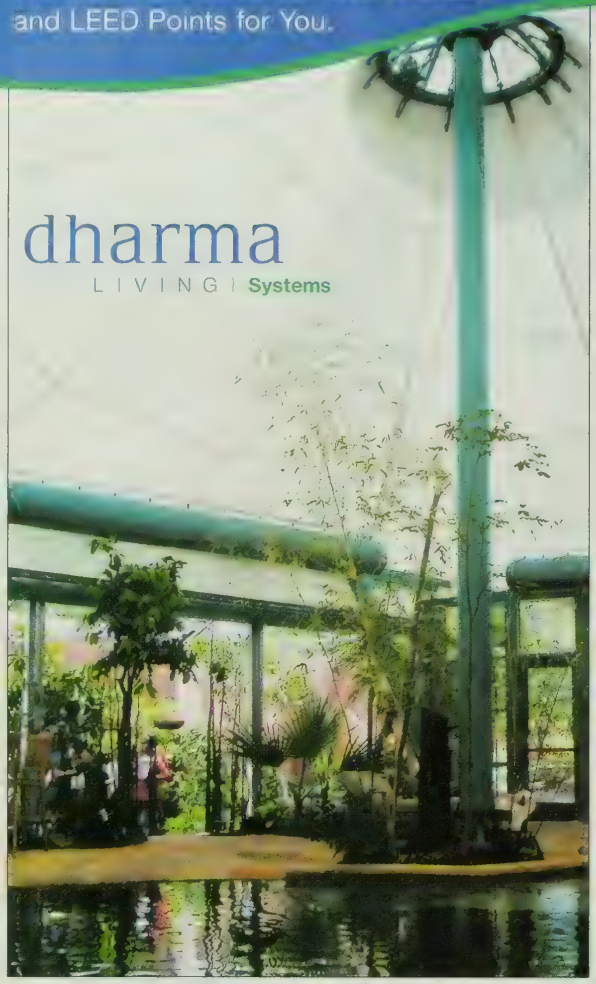
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Product Literature

Bathroom equipment catalog

Bobrick has released its 2004 catalog featuring the introduction of several products in the company's new line of Sierra Series Toilet Partitions. Bobrick Washroom Equipment, North Hollywood, California. www.bobrick.com
CIRCLE 233

Project photography book

HessAmerica has released *Hess USA References*, a 108-page book containing day and night photographs of notable lighting installations completed across the United States. HessAmerica, Gaffney, S.C. www.hessamerica.com/references
CIRCLE 234

Easy-to-use product guide

The layout of Litecontrol's new product guide allows readers to easily access the product name, catalog number, mounting, distribution, general product information, and online Quick Find number for a range of products in a variety of categories, including suspended indirect, wall-mounted, recessed, and perimeter lighting. Litecontrol, Hanson, Mass.
www.litecontrol.com **CIRCLE 235**

NEW SITES FOR CYBERSURFING

This site showcases the work of young Australian product designers
www.melbourne-movement.org



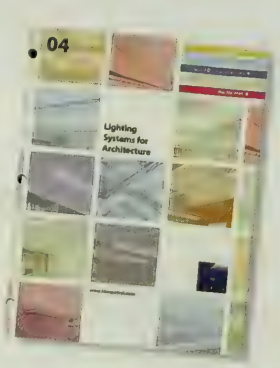
The InPro JointMaster Wizard helps specifiers determine the right architectural joint system **www.inprocorp.com**

An interactive site for designers to find innovative material solutions
www.eastmaninnovationlab.com

This useful online glass resource includes a performance data calculator
www.oldcastleglass.com

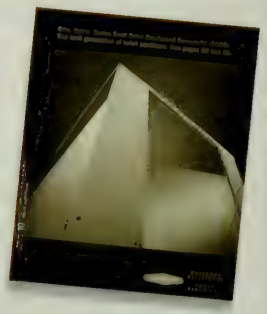
Interactive training program

The *Building Better Homes* interactive training program is based on the principles taught by building science expert Mark LaLiberte. For nearly 20 years, LaLiberte has conducted training sessions to help builders, architects, and remodelers learn to avoid hundreds of common construction callbacks and warranty claims. Building Knowledge, Minneapolis.
www.buildingknowledge.net **CIRCLE 236**









For more information, circle item numbers on Reader Service Card or go to www.archrecord.com, under Resources, then Reader Service.

Product Literature

Fluorescent buyer's guide
Holophane has announced a new line of Optically Engineered fluorescent luminaires with the introduction of its new *2004 Fluorescent Buyers Guide*. The new guide features the latest designs and technology for task-specific, energy-efficient lighting in the industrial "Big Box" retail, gymnasium, convention center, and commercial markets. Holophane, Newark, Ohio. www.holophane.com **CIRCLE 237**

Marble history brochure
Georgia Marble has released a new brochure on the history of the 120-year old company. The brochure, titled *Georgia Marble, American's True Stone Source*, includes modern and historic photos of the company's quarries, as well as color photos of prominent projects the company has worked on, including the Lincoln Memorial, The New York Stock Exchange Building, and Chicago's Buckingham Fountain. Georgia Marble, Tate, Ga. www.polycor.com/html/en/mar_f.htm **CIRCLE 238**

Color collection brochure
Leviton's 40-page *Day and Night/Night and Day Designer Color Collection Brochure* features the company's broad line of Decora designer-style and select traditional wiring devices in classic almond color and black. Leviton Manufacturing, Little Neck, N.Y. www.leviton.com **CIRCLE 239**

20th-anniversary catalog
In conjunction with the introduction of hundreds of new designs and the celebration of its 20th anniversary, W.A.C. Lighting has unveiled a 176-page catalog that features accent, task, ambient, and decorative lighting for the industry. Also available is a miniature version of the catalog and one that is CD-based for both MAC and PC platforms. W.A.C. Lighting, Garden City, New York. www.waclighting.com **CIRCLE 240**

Urethane millwork catalog
The comprehensive new catalog from Style Solutions features the addition of 223 new sizes and styles of urethane millwork pieces and 227 entirely new products. The 300-page catalog is broken into six product sections and also includes information on adhesives, customer service, delivery, and detailed installation instructions. Style Solutions, Archbold, Ohio. www.stylesolutionsinc.com **CIRCLE 241**









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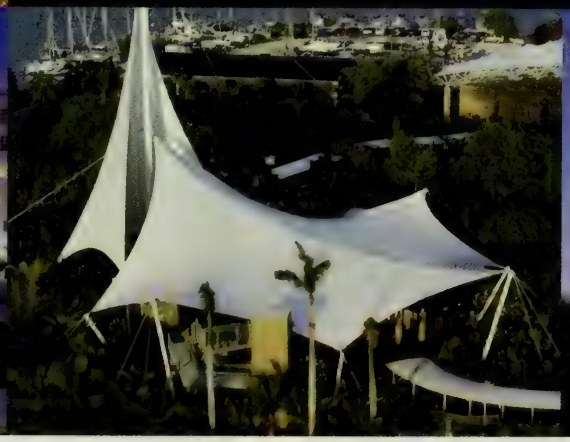
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ARCHITECTURAL RECORD

ATTENTION ALL BUILDING PRODUCT MARKETERS:

PLEASE SUBMIT YOUR NEW PRODUCTS TO ARCHITECTURAL RECORD'S PRODUCT REPORTS 2004

Product Reports will again be a major editorial feature in the December issue of ARCHITECTURAL RECORD, presenting the most interesting and useful new building products that will be available to the architect, specifier, and designer in 2005. A panel of architects, consultants, and editors will select products for publication from those submitted by September 3, 2004—and we very much want your company to be included.

Like every **Product Reports** since our first in 1972, this feature, which is an A&D reference to product introductions of the previous year, provides our readers with the most up-to-date information available.

There's no entry fee. Just review the product categories listed under "Products" at **www.archrecord.com** to locate the section most appropriate for your product. Our panel will view each product category as a group, so please include an image of each submission in a slide, transparency, glossy color photo, or color printout of a digital image. If you send a CD, you must provide a labeled color printout of each image that is on the disk. Please make sure the digital image is a high resolution TIFF (300 DPI, at least 4 x 5 inches). If you have a sample of your product (no larger than 8 x 10 inches), please include it with your submission. E-mailed submissions will not be accepted.

Send the submission form (following page), image, sample, and descriptive material to:

Rita Catinella
ARCHITECTURAL RECORD
PRODUCT REPORTS 2004
Two Penn Plaza, 9th Floor
New York, NY 10121

If you have any questions, send a note to the Products Editor, Rita F. Catinella, at rita_catinella@mcgraw-hill.com.

DEADLINE: SEPTEMBER 3, 2004

ARCHITECTURAL RECORD PRODUCT REPORTS 2004

SUBMISSION FORM

1. **Product category and section:** _____

(See "Products" at www.archrecord.com for possible listings. For multiple submissions, please photocopy form. Submissions are limited to three per main category—furnishings, lighting, etc. Do not tape slides to form. Only send products introduced after September 2003. Do not send a CD without including a color printout.)

2. **Indicate type of image included with this form:**

❑ Slide/transparency ❑ Glossy color photo ❑ Color printout (with high res image on CD)

(Photography returned only upon request.)

3. ❑ **A 50- to 60-word description of the building product, or a press release, catalog page, or insert that gives pertinent architectural and performance information is included.**

4. ❑ **A sample no larger than 8 x 10 inches is included (optional).**

5. **Please fill in completely:**

Name of new product: _____

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Name of person who will respond to inquiries: _____

Name, title, and phone of person submitting this form *(for possible editorial follow-up)*: _____

6. **Send this form, product photography, and descriptive material to:**

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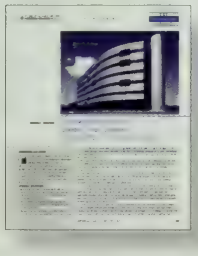
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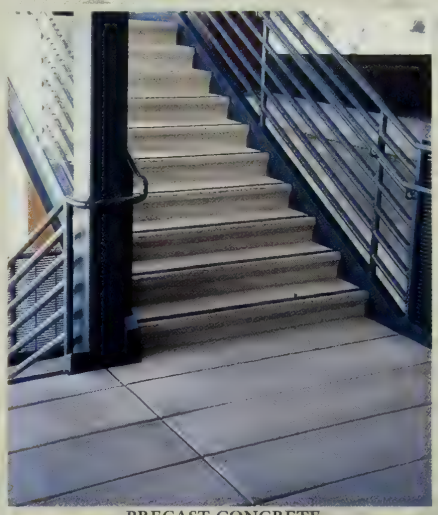
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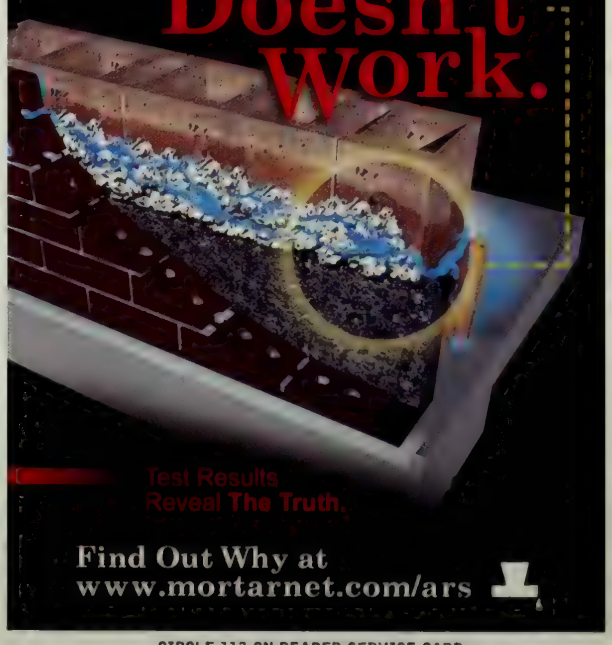
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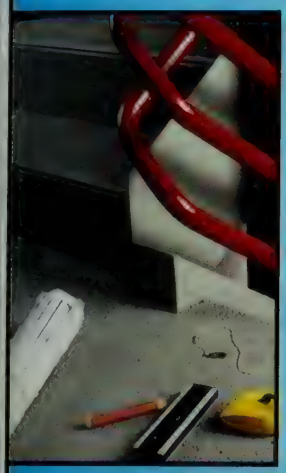
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April 2004
Architectural Testing, Inc
York, Pennsylvania

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Lighting Control Systems



16 Electrical

On ETC Unison® architectural lighting control systems, the good stuff is standard. The extras you have to pay extra for on other architectural lighting systems are included on basic Unison systems. Unison's standard features include tool-free modularity, topology-free wiring, and 120/277-voltage options; dimming and switching for fluorescent, incandescent, neon, cold-cathode, low-voltage, non-dims, and relay loads; theatrical, BAS/BMS, AV-systems interfacing; astronomical timeclock, electronic security, and lockout; full 8-year warranty on all Unison dimmer racks, dimming modules and fans; and, as important as those technical benefits—ETC's acclaimed 24/7 customer service. Visit the ETC Architectural Web site for dealer and representative information.

www.etcarchitectural.com 153

Alera Lighting

Louvered Light



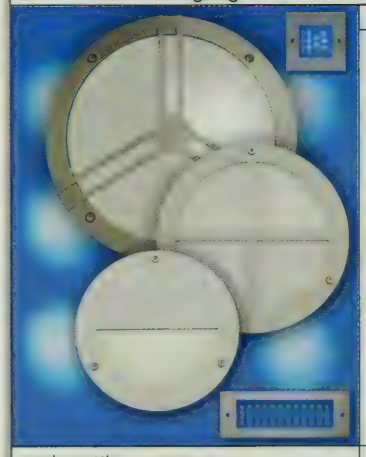
16 Electrical

Ascend Louvered offers a softly curving shape which incorporates a high performance direct component increasing efficiency and versatility across design platforms. Along each side of the length a subtle glow strip may be accented with ScreenArt™ colors if desired. An anodized aluminum louver conforms to strict specifications for superior control of the direct light element. Suspended or wall mount products available for single or continuous row mounting. Uplight and downlight may be dimmed or independently switched. Mix and match T8, T5, and T5HO linear sources. 10-in.-wide, 3-5/8-in.-high. Applications include boardrooms, videoconferencing areas, offices, schools, lobbies, and high end retail.

www.aleralighting.com 151

Lumux Lighting Inc.

Efficient Architectural Lighting 877-895-5552



16 Electrical

Lumux Lighting Inc., an architectural lighting company, distinguishes itself by manufacturing innovative, energy efficient, aesthetically and cost effective lighting fixtures serving the residential, commercial, and industrial markets. Lumux's creativity, quality, and unwavering commitment to service are the characteristics that make it a reliable architectural lighting source for architects, lighting designers, and specifiers. Lumux has the largest selection of stainless steel and LED driven fixtures in stock for any design and build type of applications. Full catalog online.

www.lumux.net 154

Engineered Lighting Products

Compact Downlights 626-579-0943



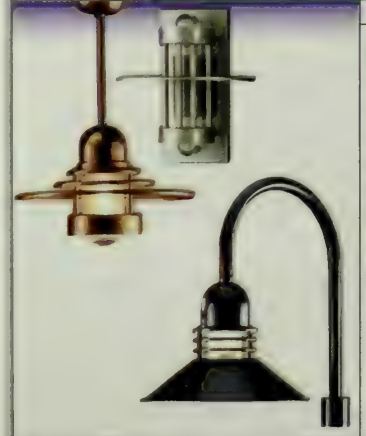
16 Electrical

New "Hole in the Ceiling" Downlights. These innovative fixtures utilize compact fluorescent, incandescent, or metal halide lamps. The GRG (fiberglass reinforced gypsum) casting has integral electrical components, which are accessible through the bottom of the fixture. Installed, it looks like a custom formed drywall light niche that blends with any interior motif. UL/CUL listed.

152

Luraline Products Company

Lighting Fixtures 800-940-6588



16 Electrical

The Helos family of lighting fixtures from Luraline Products Company features a classic industrial design in a coordinated collection of pendant, ceiling, wall, and post mount configurations. Helos is offered with choice of incandescent or energy-efficient compact fluorescent or HID lamping. A full palette of painted and metallic finishes is available, as well as custom colors on request. All fixtures in the series are suitable for interior or exterior applications. For more information, please call or visit the Web site.

www.luraline.com 155

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Prima Lighting Corp.

Light Fixtures | 866-885-4915



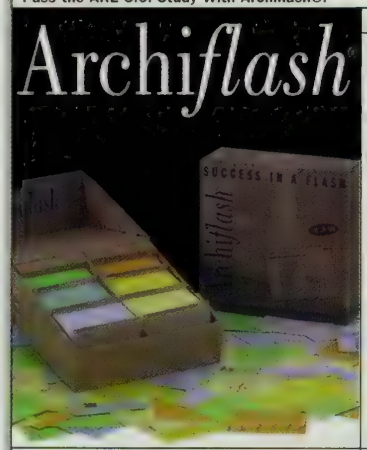
16 Electrical

The Multi light fixture series gives you complete freedom and control over your light source with high-end, elegant, and intriguing style. Easily direct the light exactly where you want and tailor the power to your needs. Choose a nine, six, four, three, or two light configuration available as a wall (shown), pendant, floor, or table light. Chrome and matte silver finishes. Clean, architectural multipoint canopies are available for the pendants. Please visit Prima Lighting's Web site or call to find out more about its breakthrough OPUS line of contemporary architectural lighting.

www.primalighting.com | 156

Naiaa

Pass the ARE 3.0. Study With Archiflash®. | 800-411-7314



1 General data

Pass the ARE 3.0. Study With Archiflash®. Get the 4th Edition. Celebrating 10 Years of Success! Prepare for the Architect Registration Exam with Archiflash®. Each set contains 1,152 expertly written flashcards covering all six multiple choice tests. Learning is easy with timesaving charts, definitions, diagrams, and multiple choice Q & A. More information than you ever thought possible in an easy-to-use flashcard format. Only $89.95. Order by phone 800-411-7314, or visit website.

www.archiflash.com | 159

Primelite Manufacturing Corp.

Hanging Light Fixtures



16 Electrical

Globes available in glass, polyethylene, acrylic, and polycarbonate. Diameters from 6-in. to 36-in. Chain, cord, and stem suspensions are available in custom stem lengths to meet your specifications. Primelite also carries decorative outdoor fixtures. Sign and task lighting. Custom types of heads and arm bends are available in all aluminum parts. Indoor wall sconces and a wide selection of children's fixtures. Hanging prismatic fixtures available in 12-in., 19-in., 22-in., 26-in. diameters with or without cages. All fixtures can be made for incandescent, metal halide, high-pressure sodium, and PL bulbs. Metal parts are powdercoated; wide selection of colors to chose from. Fixtures can designed to meet your specifications. Fax number 516-868-4609.

www.Primelite-MFG.com | 157

FAAC International, Inc.

Invisible Swing Gate Operators



2 Site construction

FAAC is the world's largest specialized manufacturer of hydraulic operators for swing, slide, and barrier gate systems. The Model 760 hydraulic swing gate operator is designed specifically for in-ground installation for residential applications. Its power, reliability, and invisibility make the 760 ideal for large ornate gates. For more information on the 760 and other FAAC products, visit the Web site.

www.faacusa.com | 160

SELUX Corporation

Indirect Lighting



16 Electrical

RITORNO luminaires from SELUX Corporation combine design elegance with high performance engineering to deliver virtually shadow-free illumination with extremely low brightness. All housings are constructed of high quality die cast aluminum. High purity aluminum reflector shades are supplied with drip groove around perimeter to prevent rain marks on underside. Fixture heads are formed to match supplied aluminum reverse tapered poles. Stylish wall mounted units are also available. Designed to complement and enhance contemporary architecture and urban settings both at night and during the day.

158

Master Halco, Inc.

Decorative Wire Fencing



2 Site construction

New EuroScape™ 300 Decorative Wire fencing incorporates some of the best design elements of industry-leading ornamental iron and color chain-link. Its steel and wire mesh construction in a special twin wire design creates unique joint strength and durability. EuroScape 300 is available in four colors: tan, bronze, white, and black. Decorative wire fencing complements a variety of architectural styles and is backed by a 12-year limited warranty. With more than 60 locations across North America, Master Halco has the products and services to satisfy your project requirements. Visit the Web site to view extensive product offering and download specifications and drawings. (Black decorative wire fencing as seen in the 2003 Sunset Idea House.)

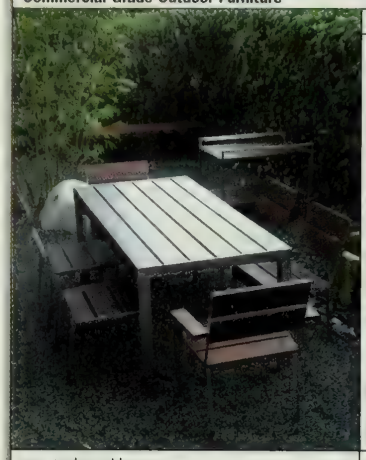
www.FenceOnline.com | 161

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Modern Outdoor

Commercial Grade Outdoor Furniture | 818-838-7060



2 Site construction

High style, clean-lined simplicity, short lead times, environmentally conscious materials—these are the attributes of Modern Outdoor—a producer of top quality outdoor furniture with a definitive modern aesthetic. The Modern Outdoor Collections are commercial grade products designed for the restaurant, hospitality, and resort industries, with an aesthetic that is perfect for a residential client's backyard setting. The entirety of the Collection is made from Ipe, Electropolished Stainless Steel, and Natural Composite materials. Modern Outdoor offers attractive trade pricing and is capable of producing large scale contract orders. Online, you can view the Collection and request a catalog.

www.modernoutdoor.com | 162

Boston Valley Terra Cotta Inc.

Architectural Terra Cotta Rainscreen | 888-214-3655



4 Masonry

Boston Valley Terra Cotta is manufacturing Terraclad™, Architectural Terra Cotta Rainscreen System. Produced in the U.S. in its Orchard Park, NY, factory, this system is available for new design and retrofit. Boston Valley Terra Cotta offers six standard profiles, six different widths, 8-in. to 16-in. in lengths from 12-in.-60-in. as well as custom designs per the architect's specifications. Also available are 13 through-body colors and custom body colors, glazed finishes, and custom sizes and shapes upon request. Terraclad is naturally a "green" material manufactured from BVTC's engineered clay body, designed to withstand the freeze/thaw climate.

www.bostonvalley.com | 165

DEX Studios

Terrazzo & Concrete | 404-753-0600



3 Concrete

DEX manufacturers precast architectural concrete and terrazzo products for commercial, multi-unit, and residential applications. Superior finishes and colors in both cast concrete and terrazzo are available in sinks, bathtubs, shower pans, tile, bar and countertops, tabletops, fireplaces, and tilt-up wall panels. All DEX products are pre-cast in a controlled environment, polished to a hard dense finish, and sealed to enhance depth and protect the finished product. Sample boards of 25 spectacular concrete colors and 10 standard terrazzo finishes available. DEX has a combined total of 50 designs and sizes of sinks, all standardized with several ADA compliant designs to make specifying them easy.

www.dexstudios.com | 163

Vetroarredo North America

Glass Block | 724-242-2121



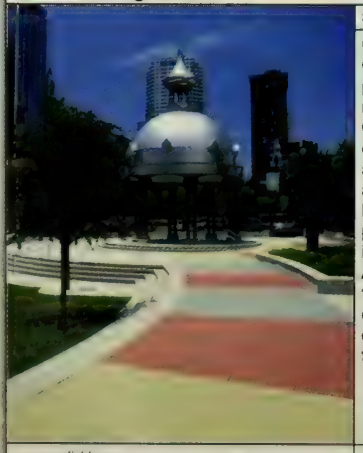
4 Masonry

VETROARREDO® is moving the glass block world to a colorful new future with a collection of exciting, quality products second to none. It crafts beautiful color and crystal clear glass block; VETROSHAPE℠ Finishing Pieces; smooth satin finishes, and unique products like VETROMARMO™ Marble Faced glass block. If you desire an easily installed mortar and silicone free interior partition, VETROARREDO's modular system—the wooden grid that snaps together in a snap℠—is available in a variety of sizes and colors. Design your future with the world leader in glass block. Add Some Color to Your Life!℠ with VETROARREDO. Fax number 724-242-2323. Email info@vanagb.com.

www.vanagb.com | 166

L. M. Scofield Company

Concrete Coloring Admixture | 800-800-9900



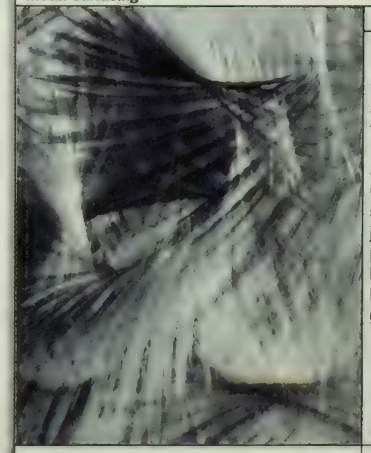
3 Concrete

CHROMIX® Admixtures for Color-Conditioned™ Concrete: Award-winning projects begin with award-winning materials. CHROMIX Admixtures for Color-Conditioned Concrete are colored, water-reducing, set-controlling admixtures for ready mixed architectural concrete. Coloring concrete integrally, they produce rich hardscapes and precast, tilt-up, or cast-in-place buildings of enduring beauty. CHROMIX Admixtures provide permanent, streak-free color conditioning and increased concrete strength at all ages. Call or email to request color cards and specifications. Email info@scofield.com.

www.scofield.com | 164

Gage Corporation, Intl.

Metal Surfacing | 800-786-4243



5 Metals

GageMetal. An innovative collection of 18 new designs suitable for walls, elevators, and column covers. Standard sizes 48-in. by 96/120-in. with available thicknesses from .025-in. aluminum to 16-ga. stainless steel. Custom design and collaboration is available. All GageMetal designs are available in sheet form for direct application to the job site substrate. They can also be panelized for demountable use with Z-bar clips or the Gage extrusion system. Fax number 608-269-7622. Email gage@centurytel.net.

www.gageverticalsurfacing.com | 167

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Gooding Aluminum

Aluminum for Architecture



5 Metals

Have you seen the new GA interactive Web site? With over 400 project shots, like this one here, and hundreds of items in the detailed product/info finder, you can discover something you haven't seen before. GA provides an outstanding selection of aluminum patterns, trims, and elements. Helping you to access and utilize the creative process and how far that can take you. You can order samples on-line and there's also a "What's New" section detailing the latest product and project news.

www.goodingalum.com

Melton Classics, Inc.

Architectural Products



6 Wood & plastics

Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, moldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers a maintenance free balustrade product ideal for any application. Balustrades are available in four durable materials: MarbleTex™ synthetic stone, poly/marble composite, cast stone, and polyurethane, and can meet any code or radius application.

www.meltonclassics.com

171

HDI Railings, Inc.

Pre-Engineered Railings 717-285-4088



5 Metals

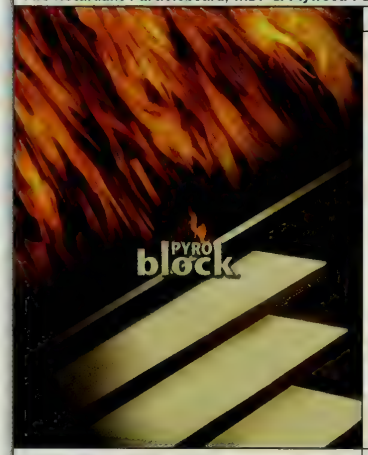
HEWI® Nylon Pre-engineered Railing System: Add color and strength to your project with a nylon guardrail system. Nylon-coated railings come in a range of attractive colors and wood finishes. They provide exceptional structural strength, chemical resistance, hygienic qualities, and are virtually maintenance free. Infill materials are available in tempered glass and perforated metal. Handrails in colored nylon and solid wood. Standard and custom designs are available. Complete supply and installation service is available throughout North America, which includes *inox*™, CIRCUM™, HEWI Nylon, and d line™ railing systems. Email info@hdirailings.com.

www.hdirailings.com

169

Panel Source International Inc.

Fire-Retardant Particleboard, MDF & Plywood Panels 877-464-7267



6 Wood & plastics

Pyroblock® Class A fire-retardant particleboard, MDF, and Plywood. Formaldehyde-free, FSC certified, recycled or rapidly renewable fibers. Pyroblock is ideally suited for the AEC community working on LEED™ registered projects. Pyroblock is available in numerous thicknesses and sizes; availability is not a problem when you specify Pyroblock.

www.panelsource.net

172

Lapeyre Stair Inc.

Convenient Conventional Stairs



5 Metals

In addition to its unique alternating tread safety-stair products, Lapeyre Stair now provides in-house design and fabrication of conventional industrial stairs that are designed and built to order. With proprietary computerized design capabilities and a facility dedicated to stair fabrication, Lapeyre Stair can offer unprecedented one-stop-shopping convenience, low prices, and lead times of three weeks or less. Check the Web site for conventional stair product updates and technical information, plus interactive features related to Lapeyre's Alternating Tread Stair: downloadable CAD files, online pricing, and more. In space-squeezed applications, the Lapeyre Alternating Tread Stair provides safer, easier access than vertical or ship's ladders.

www.lapeyrestair.com

170

Cedar Shake & Shingle Bureau

Cedar Roofing & Sidewall 604-820-7700

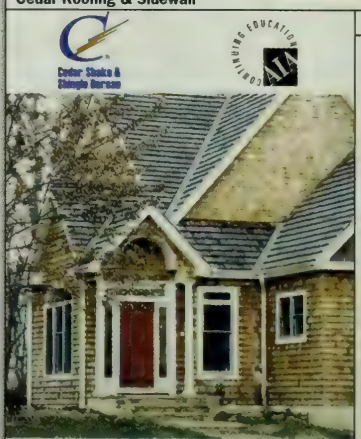


Photo: Celia Pearson

7 Thermal & moisture protection

The Cedar Shake & Shingle Bureau is a non-profit trade association founded in 1915. The organization provides installation instructions, AIA CEU educational seminars and technical advice. Member manufacturers produce Certi-label brand cedar shakes and shingles for both roofing and sidewall use as well as undergo random, unannounced third party inspections to ensure product quality. Certi-label brand cedar shakes and shingles are a renewable resource, durable, impact and wind resistant, and available with either pressure impregnated preservative or fire-retardant treatment. Some Certi-label products are available in pre-stained or pre-primed finish.

www.cedarbureau.org

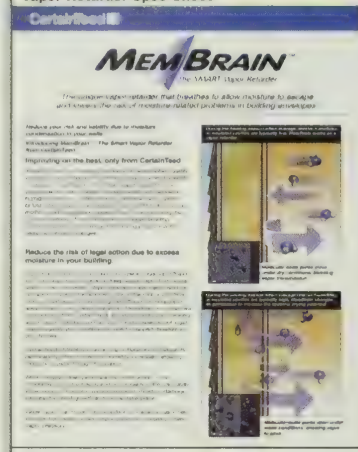
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CertainTeed Fiber Glass Insulation

Vapor Retarder Spec Sheet | 800-233-8990



7 Thermal & moisture protection

A two-page brochure describes the benefits and features of MemBrain™, CertainTeed's Smart Vapor Retarder. This unique product breathes to allow excess moisture to escape, reducing risk and liability of moisture-related problems in walls. The spec sheet also details the product performance and permeability.

www.certainteed.com | 174

Circle Redmont, Inc.

Glass Systems | 800-358-3888



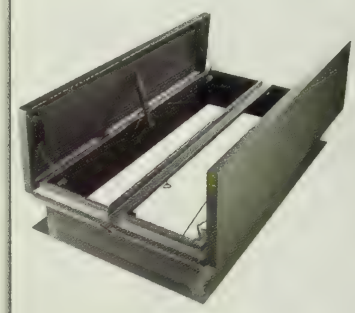
8 Doors & windows

Circle Redmont's cutting edge tech nologies and passion for dramatic ele gance shine through every glas system it manufactures. At the heart the Circle Redmont philosophy is a fir commitment to the production of th highest quality glass products tha combine intelligence with sophisticate precision; the result—simply beautifu Email sales@CircleRedmont.com.

www.CircleRedmont.com | 17

J.L. Industries, Inc.

Smoke Vents



7 Thermal & moisture protection

J.L. Industries introduces a new line of UL-listed, FM-approved fire vents. These fire vents are equipped with UL-listed 165° fusible link for automatic operation. J.L. Industries fire vents are manufactured with 14-ga. galvanized steel curb and frame and 11-ga. aluminum covers. J.L. Industries now offers a full line of domed fire vents, equipment hatches, and skylights in addition to galvanized steel and aluminum roof hatches and aluminum floor doors.

www.jlindustries.com | 175

IGT Glass

Anti-Reflective Glass | 480-767-8220

glaströsch



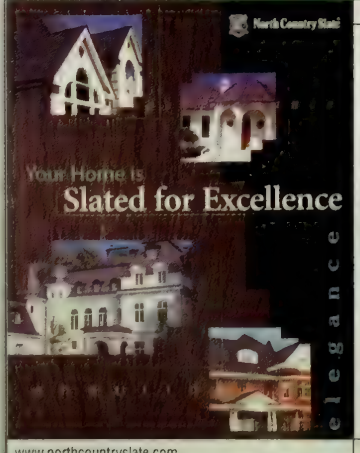
8 Doors & windows

LUXAR reduces glare and reflection b 99.5%, making every application wher it is used so clear that the glass i almost invisible. When high visibility i desired Luxar is the product of choice. is an ideal product for storefronts, suc as Toys R US, pictured, museums, sta diums, view homes and restaurants display cases, and projection rooms Contact IGT Glass for more information

www.luxar.ch | 178

North Country Slate

Slate Roofing Brochure | 800-975-2835



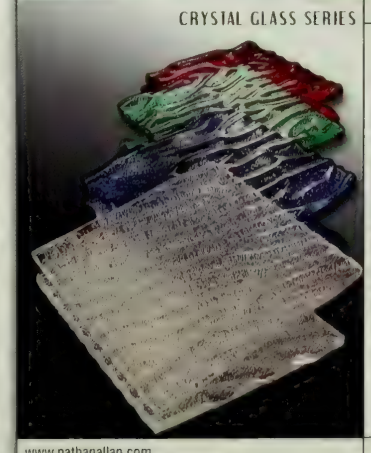
7 Thermal & moisture protection

North Country Slate offers a new brochure explaining the design and performance advantages of their remarkable roofing material to your residential customers. In six glossy pages, "Slated for Excellence" presents all the features and benefits to your client, the homeowner. Make sure you have this brochure on hand for your next discussion on slate roofing. Email info@ncslate.com.

www.northcountryslate.com | 176

Nathan Allan Glass Studios, Inc.

Decorative Glass Panels | 604-277-8533



8 Doors & windows

Crystal Glass Series is a new addition to Nathan Allan's exclusive Josiah J Collection. Crystal Glass Series incor porates a special glass frit that is fused to the back of the glass to add a stun ning and unique textured feel to the glass. Originally developed for Fou Seasons Hotel in Whistler, BC, to pro vide unique glass light covers, with the ability to hide the hot spots of the light ing sources, Crystal Panels are now being used in illuminated feature walls with added colors such as Cognac o Cobalt Blue. Available in clear or col ored glass. Catalog available.

www.nathanallan.com | 179

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Technical Glass Products

Fire-Rated Steel Framing

8 Doors & windows



Technical Glass Products offers the Fireframes™ Curtainwall Series—fire-rated steel framing for large expanses of glass spanning multiple stories. Available for interior or exterior use, the Curtainwall Series carries fire ratings up to two hours. Custom exterior face caps allow a wide variety of appearances, including stainless steel. For more information visit the company's Web site.

www.fireglass.com 180

Crossfield Products Corp.

Architectural Floor Surfacing

9 Finishes



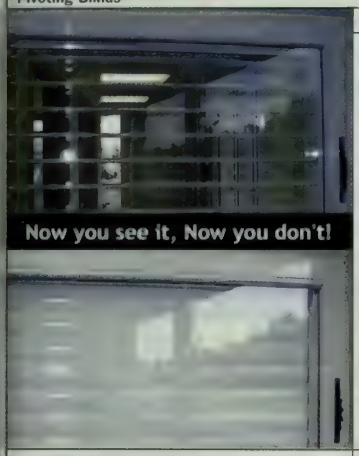
Dex-O-Tex Micro-Topping is a thin-section, seamless polymeric floor surfacing that offers years of durability and low maintenance costs. The protective surfacing is less moisture sensitive than conventional sheet and tile flooring, and provides an attractive, wear-resistant finish. Micro-Topping can be applied over a wide range of surfaces, eliminating the cost of expensive removal. It can be antiqued or chemically stained with many beautiful colors to create a variegated shading of hues and allows the application of stencils and saw-cuts for limitless design options. A wide range of polyurethane sealers with varying degrees of gloss or slip-resistance will stand up to repeated floor cleanings.

183

Unicel Architectural Inc.

Pivoting Blinds

8 Doors & windows



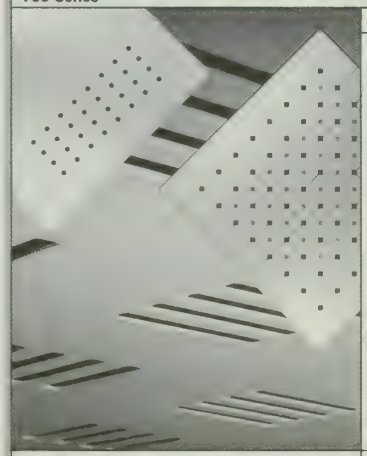
No string attached. Unicel Architectural Inc. has developed a unique patented glazing product: Vision Control®. With this custom-designed unit, you can finally enjoy total control of light, privacy, and sound without having to worry about the cleaning. Unlike ordinary Venetian blinds installed separately from the glass, Unicel's pivoting blinds made of extruded aluminum are mounted inside a hermetically sealed glass unit offering you 100% dust-free and germ-free louvered glazing. Vision Control blinds are operated using a small hand crank, thumbwheel, motorized switch, or even computer: control at your fingertips, cord-free and string free. Ideal in partitions, doors, sidelights, windows, skylights, and more.

www.visioncontrol.qc.ca 181

Gage Corporation, Intl.

700 Series 800-786-4243

9 Finishes



The new standard for perforated metal ceilings. Gage introduces its new 700 series of perforated metal ceilings manufactured from 50% recycled aluminum. Standard designs include five distinctive finishes and 14 different perforation patterns. Selective and custom designs are also available. Contact the Gage factory for literature and samples.

www.gageceilings.com 184

Zero International, Inc.

Automatic Door Bottoms 800-635-5335

8 Doors & windows



Automatic door bottoms, designed & built to last. Tested through 5 million cycles, they are engineered for easy, precise installation, with a minimum of parts subject to wear. Quality construction to renowned ZERO standard makes these gaskets the choice for superior performance and unequaled service life. Double neoprene seals and a patented spring action, automatically drop and retract in a scissors-like motion as door is operated. Fax number 800-851-0000.

www.zerointernational.com 182

L. M. Scofield Company

Concrete & Cementitious Flooring 800-800-9900

9 Finishes



Stylish Scofield flooring systems: For beauty and durability, concrete and cementitious toppings provide stylish flooring for high traffic areas in offices, lobbies, public spaces, food service, and retail areas. Scofield Systems offer diverse choices—ranging from monochromatic toppings to translucent, antique stains for faux finishes and dramatic graphics. Email info@scofield.com.

www.scofield.com 185

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Teragren LLC

Bamboo Flooring, Panels & Veneer — 800-929-6333



9 Finishes

Teragren manufactures beautiful, durable, renewable interior bamboo solid strip and wide plank flooring, stair components, panels and veneer. Featured in the Hyatt Maui, Timberland stores, Seattle Central Public Library, and other commercial and residential installations nationwide. 25% harder than oak and 2-1/2 times more stable than maple. Available in two grains and colors. Contributes to LEED™ as a rapidly renewable resource and low-emitting material. Coating materials water-based, solvent-free. 25-year residential and 5-year commercial finish warranties. Visit the company's Web site for more information. Contact Teragren for samples and/or brochure.

www.teragren.com — 186

Rangine Corporation / Rakks

Compression Support Pole



10 Specialties

The latest addition to the Rakks famil of shelving hardware is the PC4 floor to-ceiling compression support pole Shown here with Rakks shelf suppor brackets and extruded aluminum shelf this pole features threaded compres sion mounts and can accommodat floor to ceiling heights of up to 12-ft When properly anchored to the ceiling this pole can function as both a room divider and shelving system—perfec for lofts and apartments.

www.rakks.com — 189

Trespa North America, Ltd.

Interior Wall Panels



9 Finishes

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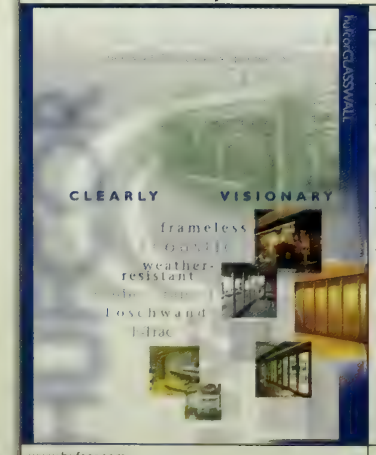
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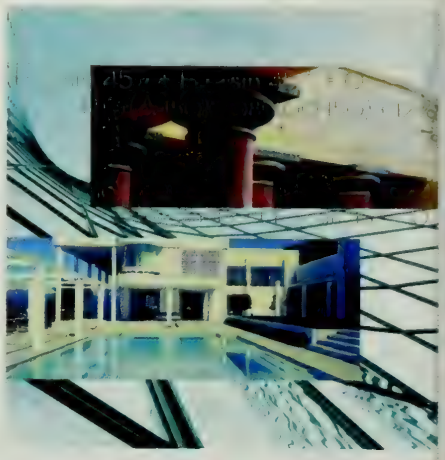
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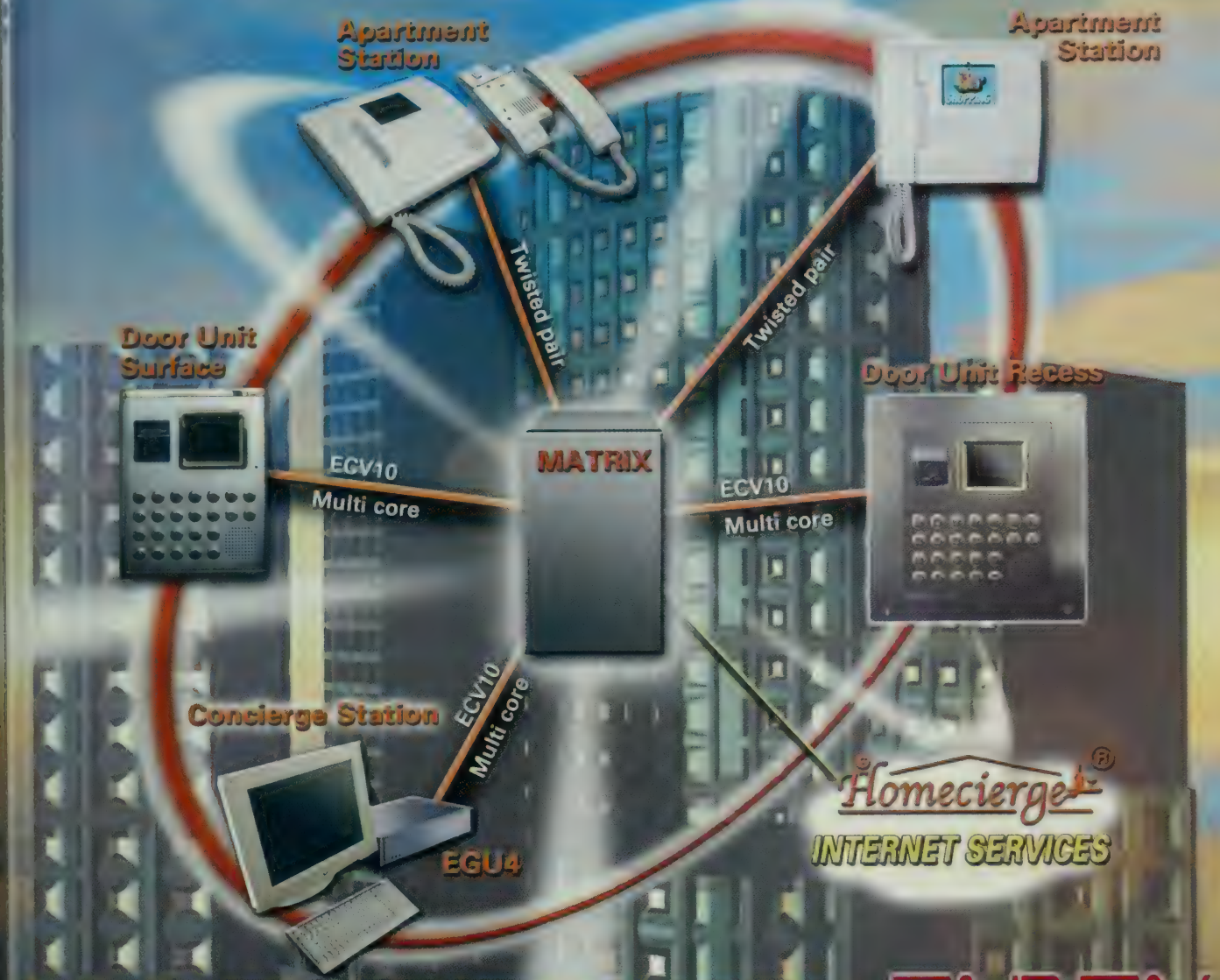
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Frances Daley Fergusson: Creating a campus that inspires

Interviewed by John Peter Radulski

Since becoming president of Vassar College in 1986, architectural historian Frances Daley Fergusson has spearheaded a campaign to enhance the school's 1,000-acre campus in Poughkeepsie, New York, which boasts buildings by Eero Saarinen, Marcel Breuer, and Cesar Pelli, among others. Fergusson graduated from Wellesley College and earned master's and doctoral degrees in art history from Harvard. She has taught at the University of Massachusetts Boston, where she chaired both the urban studies and American civilization programs, and was a provost and vice president at Bucknell University.

Q: *How do the new projects and campus improvements you've overseen contribute to the learning experience of Vassar students?* When I arrived, the campus grounds were rather shabby. Students seemed to go from their dormitories directly to the library, or classrooms, or the dining hall. There weren't a lot of outdoor spaces where students would congregate. We've upgraded many areas on campus to suit this purpose, while also renovating these destination buildings and constructing new ones. All these efforts contribute to the social and intellectual life of everyone in the campus community.
Cesar Pelli completed the Frances Lehman Loeb Art Center at Vassar in 1993. What prompted you to hire him for the Center for Drama and Film, completed last year? He was a dream to work with on the art center—he saw the design process as a collaborative effort between himself, the client, and the art faculty. And that building has functioned nearly perfectly, and has actually exceeded our expectations. The center is beautiful and very contextual with the adjacent Romanesque- and Gothic-style buildings. The Center for Drama and Film was to be built in an area of the campus that had no real architectural identity. He made very clear references to Breuer's Ferry House, a 1908 Arts and Crafts–style house by Lewis Pilcher, and other buildings nearby. The project speaks strongly to Modernism at the turn of the previous century [Pilcher], midcentury [Breuer], and the present [Pelli]. Now this part of the campus makes visual and architectural sense as it never did before.
What facilities are next in line for improvement? Kenyon Hall [a gymnasium built in 1933 by Allen & Collens] is undergoing a massive renovation by Gluckman Mayner Architects. New classrooms will be created, as well as a space for the Vassar Repertory Dance Theatre. This project will be the culmination of a campus program to create new and renovated purpose-specific art and performance facilities.
Is there one particular detail about Vassar's campus that excites you the most? I love the diversity of architecture here. There are many large buildings done in different styles, all mediated by the grandeur of the landscape. Vassar is a registered arboretum with more than 200 species of trees. In many ways, the campus reflects the students that Vassar attracts—interesting and diverse.

Photograph by Will Faller



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